

# Associate Degrees and Technical Programs



CATALOG 2012-2013

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At Universidad del Turabo (UT), every effort is made to provide accurate and up-to-date information. However, the University reserves the right to change without notice statements in the catalog concerning rules, policies, fees, curricula, courses, or other matters when necessary. Changes may apply to current and former students.

Universidad del Turabo reserves the right to make changes in course offerings, curricula, and other policies affecting its programs. In the specific case of a curriculum revision, current students will be moved horizontally to the new curriculum. Students will be required to take new courses at a level higher than that at which the student is currently enrolled but never courses at a level below. All current and former students enrolled in the Institution are subject to these conditions.

In addition, UT is currently reviewing and restructuring many of our academic programs in an effort to enhance their quality and improve our efficiency. In that process, some of the programs and courses mentioned in this catalogue may be modified, consolidated with other programs or courses, or eliminated. If you have questions about a particular program or course, you should contact the appropriate university school or department. In case that a program is eliminated, the program director will prepare a course schedule to assure the graduation of those students enrolled in the program.

It is the student's responsibility to know and comply with the rules expressed herein, which coincide with current bylaws and regulations of the University, the administrative resolutions and the federal laws on civil rights.

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# CATALOG 2012-2013

## ASSOCIATE DEGREES & TECHNICAL PROGRAMS

### OUR PROFILE

Universidad del Turabo is a nonprofit institution of higher education located 15 miles southeast of San Juan, Puerto Rico, within easy reach of the entire east-central part of the island. Its 140-acre suburban campus and its fifteen buildings provide an ideal atmosphere for the learning experience. The university also has centers in Yabucoa, Cayey, Naguabo, Isabela, Ponce, Barceloneta, and Orlando (in the state of Florida).

It is a professionally oriented institution with a variety of offerings, from technical certificates to doctoral degrees. The institution serves a diversified student body mostly from the surrounding communities, with a variety of economic and educational backgrounds.

Founded in 1972, Universidad del Turabo has continued to grow in the new millennium. The student population of more than 15,000 is composed of young adults and professionals.

The academic staff consists of more than one hundred seventy-six (176) full-time faculty members and two hundred (200) adjunct professors. The full-time faculty members hold doctorates and master's degrees in their fields of expertise. Nearly fifty-five (55) percent of Universidad del Turabo's full-time faculty are professors or associate professors, and forty-five (45) percent are assistant professors or instructors.

The gender distribution of the faculty is equally divided. Universidad del Turabo is a member of the Ana G. Méndez University System.

The academic offerings of the institution are organized into six main areas: Engineering, Science and Technology, Health Sciences, Education, Business Administration, and Human and Social Sciences.

### VISION

The vision of Universidad del Turabo is to be a high quality learning community dedicated to enhancing education among its student population and promoting advanced technology with an international orientation.

### MISSION

The mission of Universidad del Turabo is to enhance knowledge through excellence in teaching, and to foster research, innovation, and the internationalization of its programs.

The University is committed to graduating well-educated, professionally competent students who can think critically and are technologically literate. The institution also promotes the development of ethical principles and values that will allow our graduates to contribute to the well-being of the community through their knowledge of social systems and their role as responsible citizens.

### VALUES

Universidad del Turabo is committed to:

- Freedom of thought and expression.
- Recognition of and respect for diversity.
- Respect for the dignity of the individual.
- Excellence in teaching and the generation, dissemination and application of knowledge.
- Promotion of ethical, social, and cultural values.
- Excellence in planning, operations and service.
- Respect for nature and the environment.
- Promotion of human and esthetic sensibility.

### INSTITUTIONAL GOALS

To accomplish its mission, the institution recruits and develops quality human resources to excel in academic affairs, community involvement, cultural development, international collaboration, and sports. Universidad del Turabo will:

- Maintain a flexible admissions policy in which each academic school establishes requirements for its programs.
- Provide services to a diversified student body to help them achieve their academic and personal goals.
- Foster research to strengthen the teaching and learning processes as well as to improve the quality of life in the surrounding communities.
- Promote the internationalization of its academic programs through strategic alliances.
- Develop and implement a systematic faculty development plan to improve academic credentials, pedagogical competencies and instructional technology skills.
- Recruit and develop quality human resources.
- Provide academic skills and career-oriented activities to precollege students, as well as opportunities for continuing education, thus fulfilling the needs of the community.
- Promote the use of innovative and nontraditional teaching methodologies.
- Promote ethical values that will allow students to exert their professional judgment and performance responsibly.
- Foster the preservation and dissemination of those values inherent to Puerto Rican culture in a global context.

Establish collaborative partnerships among universities, government, industry, and community organizations. Contribute to students' awareness of their rights and responsibilities as citizens in a democratic society.

### ACCREDITATION AND AFFILIATIONS

The Middle States Commission on Higher Education, a regional accrediting agency recognized by the U.S. Department of Education, accredits Universidad del Turabo.

The University is a member of the following organizations:

College Entrance Examination Board  
American Council of Education  
American Association of Colleges for Teacher Education  
American Library Association  
Hispanic Association of Colleges and Universities  
American Assembly of Collegiate Schools of Business  
National Universities and Continuing Education Association

Universidad del Turabo is accredited by:

Middle States Association of Colleges and Schools  
Council on Higher Education of Puerto Rico

Universidad del Turabo has established Memorandums of Understanding (MOUs) with several institutions in engineering and science. The affiliations include:

New Mexico State University  
Georgia Institute of Technology  
Science and Technology Alliance: a consortium of Sandia National Laboratories, Oak Ridge National Laboratory, Los Alamos National Laboratory, New Mexico Highlands University, North Carolina A&T, and the Ana G. Méndez University System  
Rensselaer Polytechnic Institute  
Lawrence Berkeley Laboratories  
University of New Mexico  
Consortium for Minorities in Teaching Careers

Universidad del Turabo has extended its outreach through collaborative agreements on an international scale, promoting the exchange of students and professors with institutions such as:

Universidad Andrés Bello in Chile  
Universidad Sergio Arboleda in Colombia  
Universidad Nacional Pedro Henríquez Ureña in the Dominican Republic

### STATEMENT OF LICENSURE

Licensed by the Council of Higher Education of Puerto Rico. Licensed by the State of Pennsylvania to offer the master's degree in education in the teaching of English as a second language.

### CENTRAL ADMINISTRATION AND BOARD OF DIRECTORS

Universidad del Turabo is a member of the Ana G. Méndez University System. A fifteen (15) -member board of trustees governs the System. Of these, five (5) are permanent and the board appoints ten (10) for four-year terms. The board is composed of distinguished educators, experienced executives, and civic and community leaders.

The executive officers of the System are: the President, the Vice President for Academic Affairs, the Vice President for Administrative Affairs, the Vice President for Human Resources, the Vice President for Planning and Research, the Vice President for Marketing and Student Affairs, the Vice President for Financial Affairs, and the Legal Adviser. They are appointed by the Board of Trustees.

The System's bylaws define the objectives, powers, officers, committees, meetings and financial affairs of the institutions. They also specify the way in which the bylaws and regulations of each one of the autonomous institutions will be approved.

The Board is the policy-making, legislative and fiscal body of the System. It approves the mission of the System and its institutions, and its annual and special budgets; administers its business; confirms appointments; establishes compensations; approves academic programs and long-range institutional plans; and supervises the distribution of funds.

The Board has four standing committees:

Executive  
Academic  
Student Affairs  
Finance and Auditing  
Planning and Institutional Advancement

### BOARD OF DIRECTORS

Mr. Antonio J. Colorado, President of the Board  
Dr. Florabel Mullick, Vicepresident & Permanent Member  
Mr. José F. Méndez, President of SUAGM & Permanent Member  
Mr. José F. Méndez, Jr., Permanent Member  
Mr. Rafael Nadal, Esq., Permanent Member  
Mr. José Domingo Pérez  
Ms. Zoraida Fonalledas, Esq.  
Mr. Juan R. Melecio, Esq.  
Dr. Víctor Hernández  
Dr. Félix Rodríguez Schmidt  
Ms. Daneris Fernández  
Sr. Héctor Jiménez  
S.E. René A. León

Mr. Ramiro Millán

Gloria Castillo, Secretary of the Board  
José E. de la Cruz Skerrett, Esq., Legal Advisor

## CAMPUS ADMINISTRATION

### Office of the Chancellor

**Dennis Alicea** / Chancellor  
**Gladys Betancourt** / Vice-Chancellor for Administrative Affairs  
**Iris N. Serrano** / Director of Public Relations  
**Alba Rivera** / Assistant Vice-Chancellor of Development  
**Maricruz Rolón** / Alumni Director  
**Jacqueline Mullen-Hunt** / Vice Chancellor of External Resources  
**Carmen T. Ruiz** / Director, Josefina Camacho de la Nuez Museum and Center for Humanistic Studies  
**David Méndez** / Vice-Chancellor for International Affairs

### Office of the Vice Chancellor

**Roberto Lorán** / Vice-Chancellor  
**María Del C. Santos** / Associate Vice-Chancellor  
**Edna Orta Anés** / Associate Vice-Chancellor for Administrative Affairs  
**José R. Pérez Colón** / Assistant Vice-Chancellor for Assessment  
**Rafael Lozano** / Associate Vice-Chancellor for Retention  
**René Rodríguez** / Assistant Vice-Chancellor for Faculty Evaluation and Development  
**José R. Pérez Jiménez** / Interdisciplinary Research Institute Director  
**Armando Soto** / Webmaster

### Doctoral Studies

**Sharon A. Cantrell** / Dean

## GENERAL EDUCATION DEANSHIP

**Félix R. Huertas** / Dean  
**Phillip Murray** / Associate Dean  
**Lorna Polo** / Language Department Director  
**Juan E. Roque** / Humanities and Social Sciences Department Director  
**Ramón Alejandro** / Mathematics

### School of Business and Entrepreneurship

**Marcelino Rivera** / Dean  
**Brunilda Aponte** / Associate Dean  
**Virgin Dones** / Associate Dean  
**Linda S. Miranda** / Administrative Director  
**Marlin Brignoni** / Director of Special Projects  
**Lillian Hernández** / Director of Student Services

### School of Education

**Israel Rodríguez Rivera** / Acting Dean and Associate Dean for Undergraduate Programs  
**Jorge H. Garófalo** / Associate Dean, Physical Education Department  
**Pilar Dávila** / Acting Associate Dean

**Maritza Oyola** / Student Services Director  
**Carmen D. Rodríguez** / Administrative Services Director

### School of Engineering

**Jack T. Allison** / Dean  
**José R. Deliz** / Associate Dean  
**Oscar A. Sáenz** / Director, Industrial Engineering Department  
**Juan C. Morales** / Director, Mechanical Engineering Department  
**José L. Colón** / Director, Electrical Engineering Department  
**Luz C. Vilches** / Director, Student Services  
**Rafael M. Rivera** / Director, Institute of Telecommunications (IT+)  
**Nelson Martínez** / Director, Institute of Engineering Technology

### School of Health Sciences

**Ángel L. Rivera** / Dean  
**Nilda I. Boria** / Associate Dean for Administrative Affairs  
**María E. Rosa** / Director, Nursing Department  
**Nydia V. Bou** / Director, Health Professions Department  
**Milva Vega** / Director, Naturopathic Medicine Doctoral Program  
**Carmen Santiago** / Nursing Clinical Coordinator  
**Nelly González** / Student Services Officer  
**Joannie Ortiz** / Administrative Affairs Director  
**Ana D. Serrano** / Administrative Affairs Coordinator  
**Angeliz Pérez** / Academic Affairs Coordinator

### School of Science and Technology

**Teresa Lipsett-Ruiz** / Dean  
**Carlos J. Olivo** / Associate Dean  
**Griselda Correa** / Director, Center for Excellence in Advanced Technologies (CETA)  
**Ruth Vallejo** / Director, Department of Biology  
**José J. Duongé** / Director, Department of Chemistry and Physics  
**José Sánchez** / Director, Department of Mathematics  
**Rolando Roque** / Director, Institute of Physical and Chemical Applied Research

### School of Social and Human Sciences

**Marco A. Gil de Lamadrid** / Dean  
**Tomasita Pabón** / Associate Dean, Social Sciences Department  
**Edward Fankhanel** / Associate Dean  
**Víctor Manuel García** / Director, Communications Department  
**María M. Ortiz** / Director, Social Work Department  
**Jessica Velázquez** / Director, Psychological Services Clinic

### International School of Design

**Aurorisa Mateo** / Dean  
**Rosa Musí** / Associate Dean

### School of Professional Studies

**Mildred Y. Rivera** / Assistant Vice-President and Dean  
**Verónica Velázquez** / Associate Dean

### School of Technical Programs

**José R. Del Valle** / Assistant Vice-President and Dean  
**María E. Flores** / Associate Dean

### Information Resources

**Sarai Lastra** / Vice Chancellor of Information Resources and  
**Director Virtual Library**  
**Luis A. Arroyo** / Director, **Information Technologies**  
**José Medina** / Director, Informatics and Telecommunications  
**Luisa Torres** / Director of the Library  
**Julie Malavé** / Director, Administrative Services

### Outreach

**Héctor N. Miranda** / Vice Chancellor of Outreach

### Off-Campus Centers

**Glorymary Cruz** / Director, Off-Campus Center Naguabo  
**Glenda L. Bermúdez** / Director, Off-Campus Center Yabucoa  
**Juan Rosado** / Director, Off-Campus Center Cayey  
**Carmen L. Rivera** / Director, Off-Campus Center Isabela  
**Carlos E. Maldonado** / Director Off-Campus Center Ponce  
**Griselda Correa** / Director Off-Campus Center Barceloneta

### Student Affairs

**Ana Ortega** / Vice Chancellor of Student Affairs  
**Juanita Cruz** / Associate Vice Chancellor of Student Affairs  
**María V. Figueroa** / Associate Vice Chancellor of Student  
Affairs  
**Vacant** / Assistant Vice Chancellor for Wellness and Quality of  
Student Life  
**María del C. Santos Rodríguez** / Assistant Vice Chancellor for  
Internship and Honor Scholarship Program  
**Carmen Pulliza** / Assistant Vice Chancellor, Career and  
Placement  
**Zoraida Ortiz** / Registrar  
**Melba Sánchez** / Associate Vice-Chancellor of Admission and  
Marketing  
**Carmen J. Rivera López** / Director, Financial Aid  
**Gabriel López** / Bursar  
**Vacant** / Director, Health Services  
**Angel Vázquez** / Director, Social and Cultural Activities  
**Eva Merced** / Administrative Director  
**Nilda L. Toledo** / Student Services Officer  
**Virginia González** / Director, Admissions  
**Anabel Solá** / Director, Recruitment

### Physical Facilities, Operations and Maintenance

**Mayra Rodríguez** / Manager, Physical Facilities and  
Operations  
**Edwin Calderón** / Assistant Manager of Physical Facilities  
**Julio Colón** / Director, Administrative Services  
**José E. Machuca** / Director, Security  
**Rigoberto Dones** / Maintenance Supervisor

### Statement of Legal Control

The Ana G. Méndez University System is a private nonprofit corporation registered under the laws of the Commonwealth of Puerto Rico. Its Board of Directors under the system wide bylaws governs the corporation.

### Non-Discrimination Statement

The Ana G. Méndez University System and its institutions do not discriminate on the basis of race, handicap, national or ethnic origin, creed, color, gender, social condition or political, religious, social or trade union beliefs.

### LEGISLATIVE BOARDS

The Administrative Council of Universidad del Turabo is the legislative body of the Institution. Its main function is to establish the institutional policy of the University in accordance with the bylaws of the Ana G. Méndez University System. The Administrative Council includes the chancellor, who chairs it, the vice chancellor, the vice chancellor of student affairs, the manager of physical facilities and operations, the deans of the academic divisions, five (5) faculty representatives, and two (2) student representatives.

The Academic Board recommends the academic policy of the Institution, adopts new academic programs, approves the awarding of degrees and evaluates hiring, contract renewals, promotions, and leaves of absence for faculty members.

The Academic Board consists of the vice chancellor, the library director, six (6) school associate deans, two (2) student representatives, one (1) faculty representative for each school, and as many elected faculty members as needed to provide for their majority on the board. The chancellor is an ex officio member of the Academic Board.

### DOCTORAL STUDIES CENTER

Science and Technology Building  
Office 1.2  
787-743-7979 Ext. 4270  
Fax 787- 743-7979 Ext. 4275  
[www.suagm.edu/ced](http://www.suagm.edu/ced)  
E-mail [ced@suagm.edu](mailto:ced@suagm.edu)

Established in 2003, the Doctoral Studies Center (DSC) is an administrative unit whose main responsibility is to provide resources and support services for graduate students who wish to pursue doctoral studies. Through workshops, seminars and conferences, the Center contributes to the University's image of academic excellence and leadership. The DSC also promotes scholarly research among students and faculty.

The DSC is located in the Science and Technology Building and is directed by the Dean of Doctoral Studies. The Dean interacts with all the UT Schools and their respective coordinators of doctoral programs. In this way, the

Doctoral Studies Center and the coordinators work together to ensure that all doctoral students are well attended and supported.

### MISSION

The DSC is devoted to the advancement of knowledge through research activities and to the establishment of ideal support conditions for UT doctoral students. The Center also collaborates with the six UT Schools to stimulate and enhance academic and scientific experiences.

### VISION

The DSC is a key facilitation agent that promotes excellence through academic and leadership opportunities for graduate students by encouraging the development of research activities.

### SUPPORT SERVICES

The Doctoral Studies Center is actively involved in the recruitment, retention and graduation of doctoral students at UT. To this end, the Center provides assistance from the initial application stages to the completion of a doctoral degree. Hence, the Center supports the following initiatives:

- Academic and career advising
- Professional development seminars
- Group study areas
- Doctoral resources study room
- Doctoral level bibliographical services
- Laptop loan program for doctoral students
- National and international conferences
- Science authors recognition program
- Doctoral studies council
- Doctoral fellowships and scholarships database
- Teaching assistant and research assistant programs

Ultimately, the Doctoral Studies Center is a clearinghouse of information and resources to ensure the graduate students' successful completion of an advanced degree while enhancing their personal, social, academic and professional experiences.

### MULTIDISCIPLINARY ENTREPRENEURIAL PROGRAM FOR INNOVATION (MEPI)

The aim of this program is to instill entrepreneurial skills, in order to facilitate graduates' transition from the academic environment to professional life, and to increase their motivation to start their own businesses. It presents students with the option of a non-traditional learning environment which allows them to apply technical skills long before they would learn about them in traditional lecture classes. This initiative fosters the creation by UT students of small business enterprises, thus providing a pathway toward the diversification of employment in Puerto Rico. It also promotes and encourages a framework

of collaboration between the university and industry, contributing in this way to the economic development of Puerto Rico's East Central region.

Important MEPI activities include an extensive learning environment that is centered on multi-disciplinary, active, discovery-based learning, and the formation of student entrepreneurial work teams that operate using real life private enterprise paradigms.

### Objectives:

Develop in students an entrepreneurial attitude resulting in the creation of new services and enterprises.

Contribute to Puerto Rico's economic development

Students must enroll in the MEPI for six continuous semesters. Each student enterprise will be required to address and complete at least two major projects. Over a three-year period, student tasks and responsibilities will vary, contributing different elements as students progress in their levels of technical expertise, maturity and seniority. The MEPI track is registered on the student's transcript.

The MEPI Option replaces 12 credits of existing courses within the programs. These twelve credits are distributed as follows:

MEPI 351	New Venture Creation	1
MEPI 352	Legal Issues of Entrepreneurship	1
MEPI 353	The Business Plan	1
MEPI 455	Enterprise Project I	3
MEPI 456	Enterprise Project II	3
	Elective (to be chosen from a list provided by the school)	3

## RESEARCH INSTITUTES

### TELECOMMUNICATIONS INSTITUTE (IT+)

Under the direction of Dr. Jintao Xiong, and Dr. Jeffrey Duffany, The Telecommunications Institute (IT+) of the School of Engineering of the Universidad del Turabo has installed the most advanced technology in the area of convergence of telecommunications technologies and in the critical area of Network Security in Central America.

The Telecommunications and Information Resources Center specializes in the following research areas:

Design of Convergence Networks  
 Network Security Practices and Issues  
 Verification, Validation and Certification of Software Products

The installations are divided among three laboratory facilities: the Telecommunications Technologies lab, the

Operating Systems lab and the Network Security lab. The main technologies available in these labs are as follows,

IP Telephony and Digital Telephony

Layer two and three switches

Wireless Network

Windows Servers

HP-Unix Servers

Linux Development Environment

PABX Optic Fiber

Cisco Routers

Sun Microsystems Blade Servers

Computers available: over 100

Digital and Plasma projection facilities and equipment

Conference Room

Windows, Unix and Linux programming environments

### **PUERTO RICO ENERGY CENTER (PREC)**

The Plasma and Renewable Energy Center will be an R&D facility in solid waste disposition and renewable energy. The technological areas of the center are plasma gasification and vitrification, photovoltaic solar cells, and fuel cells. The center will be available for demonstrations of potential applications benefiting municipalities, the pharmaceutical industry, and other private and public partners, helping to promote R&D efforts and business development. It will provide education, awareness, and technical assistance activities on renewable energy, with a particular interest in environmentally friendly solid waste treatments.

Under the leadership of Dr. Jack T. Allison, Dean of the School of Engineering, PREC will concentrate its efforts on the implementation of the project's first phase activities:

Construction of new PREC facilities

Development of Cruise Ship Solid Waste Disposal Prototype

Establishment of initial research activities related to:

Residue Composition Analysis

Hydrogen Production

Fuel Cell Laboratory activities

### **INTERDISCIPLINARY RESEARCH INSTITUTE (I<sup>3</sup> FOR ITS SPANISH ACRONYM)**

The goal of the Interdisciplinary Research Center is to establish research projects that transcend basic research in the basic sciences, environmental and biomedical sciences. The objectives of this Center are to:

Foster internal interdisciplinary research projects to support the professional development of UT faculty.

Foster interdisciplinary research projects with external collaborators that are relevant to the UT vision and mission.

Establish a high-quality research center that acts as a liaison between academic and research institutions in the United States and Latin America.

The I<sup>3</sup> Research Center is funded through federal and local research grants. In addition, the Center will sponsor conferences, workshops, educational trips, and consulting opportunities to supplement their grant funded income.

The Center will concentrate its efforts to establish partnership with federal agencies such as: NASA, NSF, and NIH, as well as, US EPA, NFWF, USGS, NOAA, and TNC.

The Director of the Center, Dr. José R. Pérez Jiménez, is currently involved in various interdisciplinary research projects with all the previously mentioned agencies. Some examples are:

Las Cucharillas: Wetlands Management Project

Environmental Health and Toxicology Vieques Project

Disaster Prevention and Management

SIG and Environmental Informatics

Environmental Disaster Mitigation

Bridges to the Doctorate

Environmental Assessment Center in Cabo Rojo

Fellows Enhancing Science and Research

Environmental Education School Network

Asthma Prevention and Management

Justice, Education and Environmental Information Awareness Program

Professional Development Initiatives for Teachers

Environmental Professional Development Certification Institute

### **INTERNATIONAL CENTER OF ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT STUDIES (CIEMADES)**

CIEMADeS is an international R & D initiative involving Puerto Rico, the Dominican Republic and Haiti; its purpose is to address environmental and sustainable development issues in these three Caribbean countries. This collaboration is driven by the Caribbean area's insufficient environmental protection, increasing population density, territorial limitations, lack of social awareness regarding the environment, increasing and urgent economic developments, and the need to strengthen specialized government infrastructures.

Through CIEMADeS, these three countries will be able to: focus attention on regional issues, share experiences and available resources, and facilitate academic and scientific synergy-related activities. The following initial projects have been proposed to establish this international initiative:

Host a regional conference to discuss environmental and sustainable development issues  
Develop a human resources (environment and sustainable development) experts inventory  
Characterize environmental and sustainable development parameters  
Create a regional environmental resources database to be used as a baseline  
Establish a post graduate scholarship program  
Develop a formal and informal environmental curriculum

#### **IMPORTANT NOTE:**

This catalog contains the major points of the current agreements between the students and Universidad del Turabo. The University limits its agreement to the semester or session in which the student is duly enrolled and for which (s)he has paid the corresponding fee.

It is the student's responsibility to know and comply with the rules expressed herein, which coincide with current bylaws and regulations of the University, the administrative resolutions and the federal laws on civil rights.

### **ADMISSIONS**

#### **GENERAL ADMISSION REQUIREMENTS**

Students wishing to be admitted to Universidad del Turabo technical programs/associate degree programs must meet the following requirements:

File an application with the Admissions Office within the stipulated time limit.

Graduate from an accredited high school or complete studies equivalent to high school and submit the necessary certification.

Submit a \$15.00 nonrefundable application fee.

All students who have not completed their certificate and who are interested in continuing their university education must meet the admission requirements for the regular program.

Students who have graduated should apply for reclassification.

All candidates for admission may be subject to an interview with the Admissions Committee.

#### **ADMISSIONS FORMULA**

Admissions will be determined by the Admission Index formula. It is computed using the results of the following areas of the College Entrance Examination Board: verbal aptitude, mathematics aptitude and English achievement. The high school grade point average is also considered.

#### **READMISSION**

Students must apply for readmission if they interrupted their studies and did not attend the university for one

semester or longer. (Summer sessions do not count as interruptions.)

Students must complete the required number of credits for their **year of study**.

Students must comply with the requirements of the study program of their choice as well as other general requirements that may apply.

In order to be readmitted, the period of suspension for academic or disciplinary reasons must have elapsed.

Candidates for readmission may be required to have an interview with the Admissions Committee. It is comprised of the Vice Chancellor of Student Affairs or his representative, the Director of Admissions, the Vice Chancellor for Wellness, the Registrar, the Vice Chancellor or his representative and the dean of the school. In special cases, the Committee will have the final authority to determine admissions.

#### **TRANSFER STUDENTS**

Transfer students are considered for admission if they have followed a course of study in an accredited university and have completed no fewer than 12 credits in the institution from which they proceed. Their grade point average (GPA) must be above the institutional minimum requirement. The students must not be under academic or disciplinary sanction in the institution from which they proceed.

In order to be admitted, students wishing to transfer must meet the requirements of the program of their choice. The Admissions Committee can evaluate applications.

#### **COURSE VALIDATION**

Transfer students have the option of validating courses taken no more than 12 years prior to admission for equivalent courses offered at Universidad del Turabo. The students must have a minimum grade of C in each course.

#### **ADVANCED PLACEMENT TEST**

Credit will be granted for the Advanced Placement Tests of the College Entrance Examination Board if the score obtained is 3 or more, on a scale of 1 to 5.

#### **PRE-COLLEGE COURSES**

Credit will be granted to students for courses offered by Universidad del Turabo at the high school level. These courses must be in addition to those required for graduation and must be approved with a grade of A, B or C. The various schools will establish the grades required in the courses to be credited.

The Pre-College Program will keep record of the student's progress and will send evidence of the completed courses to the Registrar's Office, after the student is officially admitted to the University. This documentation will become part of the student's file.

### **RESIDENCE**

All transfer students must observe the following rules to obtain residence at the University in order to qualify for graduation:

1. Complete the last (30) thirty credits of their bachelor's degree at Universidad del Turabo, (12) of which must be in their major field of study.
2. Successfully complete the last twelve (12) credits of the associate degree at Universidad del Turabo.
3. Twelve (12) credits of residence (set by each program) will be required of students from Off-Campus Centers.

### **TRANSIENT STUDENTS**

Transient students must be authorized by their own university to take courses at Universidad del Turabo for no longer than two academic semesters.

Universidad del Turabo admits visiting students or auditors. They must apply for admission within the time limit established by the Admissions Office. They must attend their regular courses but will receive no credits or grades. These students are not eligible for financial aid.

Authorization for enrollment of transient students and auditors does not constitute a formal admission into the institution, and it terminates at the end of the academic session for which it was granted. To obtain regular student status, students must comply with the admission requirements in force at the time when the application for admission was filed. All applications are subject to an interview by the Admissions Committee.

### **INTERNATIONAL STUDENTS**

The Universidad del Turabo accepts foreign students as permitted by immigration laws. Foreign students are subject to the admission, readmission and transfer requirements established by the Universidad del Turabo.

### **EFFECTIVE DATES**

Admission or readmission at Universidad del Turabo will be valid for one semester of the academic year, beginning on the date it is granted. Applications that do not include the required documents, or that do not meet all the established requirements, will be considered provisional. If all documents are not received within 60 days from the first day of class, the institution may invalidate the provisional admission.

Applications forms should be requested from:

**UNIVERSIDAD DEL TURABO  
ADMISSIONS OFFICE  
P O BOX 3030  
UNIVERSITY STATION**

**GURABO PR 00778**

**TELEPHONE: (787) 746-3009**

### **TUITION AND SPECIAL FEES**

Once a year the Office of the Vice President of Financial Affairs publishes a circular with information about tuition costs for all academic programs, and special fees for student services at Universidad del Turabo. Upon request, this document is available at the Bursar's Office to students and to anyone in the institution who requests it.

Tuition, fees and service charges must be paid in full during registration or at the time the student requests services. Payments can be made in cash or by check, money order, debit cards or credit cards. Receipts for all transactions must be requested and retained, and presented with any claim or request for adjustment. The Bursar's Office will not accept claims without receipts.

In accordance with established rules and regulations of the institution, the Ana G. Méndez University System may amend standards and tuition fees.

The Deferred Payment Plan is available to parents, tutors or adult students who do not receive financial aid. The recipient will sign a promissory note and payments will be made on or before the specified date on the promissory note. If the University is forced to contract legal or collection services in order to collect, the student will pay the legal and/or agency fees.

### **CLEAR STATEMENT**

Students with an outstanding debt balance will not be allowed to take final examinations until such balance is paid in full. Upon receipt of payment, the Bursar's Office will issue a Clear Statement, which must be presented by the student at each examination. Students who do not comply with this requirement will receive a grade of Incomplete and will be required to pay a \$20.00 fee for each Incomplete grade in order to have it removed from the record.

### **ADJUSTMENTS AND REFUNDS**

Active students who request total withdrawal before 60% of the registration period has ended will receive an adjustment in the fees and assigned funds in accordance with federal regulations for programs with Title IV funds. In addition, students identified as NA (not attending) a course will be charged a 12% fee for each course in which they enrolled. These fees will not be covered by federal funds. During the add/drop course adjustment period, students can add or drop sections without additional cost.

### FINANCIAL AID

Universidad del Turabo makes every effort to help its students obtain government financial aid for those who are unable to begin or continue their university education without such aid. There are three categories of financial aid: scholarships, loans and work-study programs.

### SCHOLARSHIPS

Scholarships are granted according to the educational and financial needs of the student. Only undergraduate students are eligible to receive funds through Pell Grants. However, a Free Application for Federal Student Aid (FAFSA) is needed to determine the student's eligibility for other federal aid programs.

### STATE FUNDS

The Council of Higher Education of Puerto Rico provides funds to supplement the cost of graduate education. This aid applies to all students who are eligible according to the student's eligibility index provided by the FAFSA evaluation.

### FAMILY FEDERAL EDUCATIONAL LOANS PROGRAM

The Financial Aid Office will recommend and process the loan directly to the U.S. Education Finance Corporation (USEFC) in its electronic form. This loan must be repaid in cash; the repayment should begin six (6) months after the student graduates or ceases to study. The guaranty agency American Education Services (AES) will pay the interest while the student is enrolled in a recognized post-secondary institution. The interest is variable, but does not exceed 8.25 percent. Borrowers should check the interest rate on their promissory note.

### WORK-STUDY PROGRAM

This program provides jobs for undergraduate and graduate students. The Financial Aid Office assigns a specific amount of hours that the student works on campus.

### FINANCIAL AID APPLICATION AND RENEWAL

The deadline for application or renewal of financial aid for the academic year is May 2. Applications received after this date will be classified as late applications and will be processed as such after receiving the applications submitted on time. Late applications will be reviewed if funds are available. Students who have participated in the financial aid program during the first term do not need to renew their financial aid program during the same academic year if they comply with the requirements for continuing in the program. Financial aid must be requested through the FAFSA form on the Web, in person at the Financial Aid Office, or by mail at:

**Universidad del Turabo**  
**Admissions & Financial Aid**  
**P O Box 3030 University Station**  
**Gurabo, Puerto Rico 00778**

The FAFSA includes the list of requirements and documentation necessary to apply for financial aid.

### Important Note

The above-mentioned aid is conditioned to the availability of the respective federal, state and institutional funds. It is the student's responsibility to take the steps necessary to obtain financial aid from the government. Such aid is directed to the student as a citizen and not necessarily to the University. Universidad del Turabo is a private, secular, nonprofit institution, and is independent of any government.

The institution fully complies with the Privacy Rights of Parents and Students Act of 1974 (Title IV of the U.S. Public Law 90-247), as amended, which specifically governs access to records maintained by institutions to which funds are made available under any federal program for which the U.S. Commission of Education has administrative responsibility, and the release of such records. Such institutions must give parents of students access to official records that are directly related to the students and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate.

Institutions must obtain the written consent of parents before releasing or relinquishing data with personal identification from the records, except to certain specified parties. (Parents and students must be notified of these rights transfer to students at certain points, and an office and review board has been designated at the federal office of Health, Education and Welfare to investigate and decide on complaints and violations of this law.)

\*In order to receive financial aid, students must comply with the Satisfactory Academic Progress Policy.

## ACADEMIC REGULATIONS

### REGISTRATION FOR COURSES

The Vice Chancellor of Student Affairs establishes the period for the registration process and includes the enrollment period in the calendar.

Students are required to register during the period specified in the calendar.

The official notification of admission is required to begin the enrollment process.

For registration to be official, the bursar must validate the student's program-receipt.

Students are also required to register during the assigned calendar period, for day or evening sessions, and this information will become part of their academic record. The

institution has the right to change the time, the calendar, or the classrooms of announced courses and to close or eliminate sections or courses from its academic offerings.

**CLASSIFICATION OF STUDENTS**

Full-time regular students are those who have registered for programs of no less than twelve (12) credit hours and are degree-seeking candidates. Part-time students are those with an academic workload of six (6) to eleven (11) credits hours and are degree-seeking candidates.

**ACADEMIC LOAD**

Academic load will not exceed twelve (12) credits per term for students with a GPA of 2.00 or less, and eighteen (18) credits per term for students with a GPA of 2.01 to 3.00. An academic load or more than twenty-one (21) credits will require prior approval by the dean of the school.

For summer sessions, academic load will not exceed twelve (12) credits, distributed over two (2) sessions. An academic load or more than twelve (12) credits will require prior approval by the dean of the school and referral by a counselor.

**ATTENDANCE**

The Institution is not required by any state or regional accrediting agency to take attendance. Nevertheless, a census is made during the first weeks of each semester to determine whether the student attended at least once during the period of enrollment. This census is made for reporting requirements only.

Nevertheless, professors may take into consideration the student’s attendance when grading and should explain the possible impact of absences on the student’s final grade, if any. The student is also responsible for all material covered during the course, even if he misses classes during the semester. Thus, attendance is strongly recommended to better retain the student and facilitate achievement of his/her academic goals.

**GRADING SYSTEM**

The Office of the Registrar distributes final grades after the end of each term. Students are graded according to the following system of letters and percentage values.

A	(90-100)	=	excellent
B	(80-89)	=	good
C	(70-79)	=	average
D	(60-69)	=	deficient
F	(0-59)	=	failure

A	4 grade points per credit hour
B	3 grade points per credit hour

C	2 grade points per credit hour
D	1 grade point per credit hour
F	0 grade points per credit hour

**In special cases the following grading system will be used:**

- W - Official Withdrawal
- I - Incomplete Work
- IP - To be awarded only with the Registrar’s permission in courses that span more than one term.
- P - Passing Grade – Grades of P are not counted toward the grade point average.
- NP - Failure
- NR - Not Reported
- \* - Repeated Course
- WA - Administrative Withdrawal
- WN - Non Attendance – enrolled but did not attend classes.
- AU – Audit Course
- T – Transfer Credit

**GRADE CHANGES**

Students who believe that there is an error in one or more grades should notify the Office of the Registrar within the first thirty (30) calendar days of the beginning of the next session. Students who do not receive their grades at the end of any semester should immediately contact the Office of the Registrar.

An instructor may change a previously assigned grade by processing an official change of grade form in the Registrar’s Office. The instructor must request the grade change form, cite the reason for changing the grade, and submit it to the school or program dean(s) for approval. All grade changes must be submitted to the Registrar’s Office no later than the last day of class of the following semester.

**GRADE APPEALS**

If the student feels that he or she has not been graded fairly, (s)he should first consult the professor. If this proves unsatisfactory, the student should then consult the dean of the school or program. If still unsatisfied, the student may consult the Vice Chancellor and submit an official grade appeal to the Registrar’s Office. A committee hearing will be scheduled.

**INCOMPLETE “I” GRADE**

The student will receive a provisional grade of INCOMPLETE only in the case of a justifiable absence from the final examination and if there are a minimum of three partial grades required in the course.

The opportunity to make up the examination or final project will be offered only to those students who have a chance of obtaining a minimum final grade of “D”.

It will be the responsibility of the student in question to make the necessary arrangements with the professor or dean of the corresponding area to determine the final project and to change the INCOMPLETE.

The INCOMPLETE (I) status can be changed if the student completes the required work within the first thirty (30) days of the next academic session, in accordance with the established dates of the academic calendar.

The student who, due to the INCOMPLETE received in one or more courses, does not demonstrate academic progress, will recuperate financial aid once the INCOMPLETE is removed in accordance with institutional norms, providing that this occurs within the deadline established by the federal government for assigning such aid .

For the purpose of evaluating a student's satisfactory academic progress at the end of the academic year, the (I) will be considered. After the removal of the Incomplete (I), he or she can appeal the institutional decision regarding academic standing.

### REPEATING COURSES

Students may repeat a course in order to improve their academic average. Credit will be given for the higher grade, which will be used to compute the grade point average. If the grade in the second attempt is the same as the first, only one will be used to calculate the cumulative average. Students who wish to repeat a course may do so. However, they **must** repeat all courses required for graduation where a D, F, or W grade was obtained.

The institution will allow students who earned a C, D, F, W or WF, WN in a course to receive financial aid to repeat the course, provided that 150% of the intended courses have not been exceeded.

Students who repeat a course will receive the higher grade. If the grade obtained in a repeated course is the same as the previous grade, it will count for the cumulative average, but will count only once for the graduation GPA.

With respect to practicum courses, the student will have only two opportunities to repeat the course, pending the recommendations and approval of the program dean and practicum supervisor.

A student will not be able to repeat the course until a grade has been posted.

### WITHDRAWALS

Students wishing to officially withdraw from a course or from the institution must file an application with the Office of the Registrar within the period established in the academic calendar. A reduction in course workload may jeopardize the student's financial and/or veteran's benefits. The academic standing of the student will not be affected by partial or full withdrawals from the institution so long as the withdrawal is carried out before the end of the period

specified by the institution for tuition refund eligibility. In the case of full withdrawal from the institution, the student will be considered not to have studied that semester.

Dropping courses or withdrawing from the institution after the end of the above-mentioned specific period will affect the academic standing of the student. The student will be classified in the category in which he or she falls at the end of the period for withdrawal eligible for refund of registration fees.

Repeated courses will be considered when determining students' academic progress.

### CHANGES IN THE PROGRAM OF STUDIES

Students can apply for a reclassification in program or major if they comply with the following:

1. Have an interview with the school dean
2. Apply for reclassification at the Office of the Registrar.

Students can apply for only one reclassification during a semester. No applications will be considered during the summer. The applications must be submitted within thirty (30) calendar days after the third week of class of each semester.

Students in Technical/Professional Programs who wish to be reclassified into undergraduate programs should fulfill graduation requirements and apply for graduation.

The admission criteria will consist of the grade point average required for graduation and the grade point average required by the school or program to which the student is applying. In addition, the dean of the school which will admit the student will determine which courses will be accepted as valid.

All enrolled credits and the cumulative average of the previous program will be counted for the purposes of the Satisfactory Progress norm of the program into which the student has been reclassified.

### STANDARDS FOR ACADEMIC PROGRESS

There are three categories of regular students according to their grade point average and number of courses completed: students with excellent achievement; students with satisfactory achievement; and students on probation. Students with a satisfactory academic progress are those with a grade point average equal to or higher than the established retention index and who satisfy the percentage of approved credit hours established by the academic norms.

At the end of each academic year, the Registrar will determine the grade point average (GPA) and the credit

hours required of each student per academic year. This information will be measured against the established retention standards in order to determine the academic status of the student.

Academic progress of students admitted as transfer students will be evaluated for retention purposes at the end of their first year; credits and grade point average prior to that year will not be considered.

#### **ACADEMIC PROBATION**

Students whose academic achievement is below the established retention index or who do not complete the percent of approved credit hours required according to regulations will be placed on academic probation for one (1) year, during which time they will be eligible for economic assistance. For students of Technical Programs, the probation period will be for one (1) semester.

Upon completion of the probation period, students must meet the required percentage of credit hours and grade point average, as established by their academic degree program.

For retention indexes, and percentage of credits required, see Appendix.

#### **ACADEMIC SUSPENSIONS**

Students will receive a one (1) year academic suspension if the cumulative academic index is lower than the retention index, or if they have not met the percentage of required credit hours upon completion of their probation period.

The University will not accept courses, diplomas or degrees earned by a student during the academic suspension period.

Students who wish to be readmitted upon completion of their academic suspension period must meet the current university readmission requirements.

Students who interrupt their students or program during the probation period will be still considered on probation during the readmission process.

Readmitted students who have completed their one (1) year suspension period will be evaluated by the Admissions Committee of their academic program. Upon readmission, students will be placed on probation for a second period.

If a student does not meet the required retention index and the percentage of approved credit hours during the second probation period, he or she will be suspended academically for a maximum period of two (2) years.

The institution may suspend a student on recommendation of the Disciplinary Committee or the Vice Chancellor of Student Affairs, following the dispositions of the Student Regulations available in the Students' Rights and Responsibilities Manual.

Under extraordinary conditions, the Academic Suspension Appeals Committee may approve an additional probation period of one (1) year if a student is able to complete all the graduation requirements within that academic year.

#### **APEALS**

A student may appeal an institutional decision regarding satisfactory academic progress, if under extenuating or crisis circumstances he or she was not able to meet the requirements or conditions established by the University. The University will consider the following crisis or extenuating circumstances to accept a student's appeal and to grant an exemption from the Academic Progress Policies: illness of the student or a relative, economic crisis due to illness affecting the a head of household, natural disasters, divorce, death in the immediate family, family problems, legal circumstances, and justified changes in academic objectives which cause an impact on the student's academic progress.

#### **APEALS COMMITTEE**

The Appeals Committee will be composed of one representative from each of the following offices: Dean of the School, Registrar, and Vice Chancellor for Student Affairs or designated representatives.

#### **APEALS APPLICATION**

- a. Students who meet any of the academic progress appeals criteria must submit all the necessary documentation to justify their request.
- b. If a student requests an appeal based on a mathematical or calculation error, and it is corrected by the Office of the Registrar, he or she will not go through the full Appeals process.

#### **REINSTATEMENT OF FINANCIAL AID**

If a student's appeal is accepted by the Appeals Committee, he or she will be eligible to receive financial aid as long as he or she meets the federal financial aid deadlines and guidelines.

Appeals decisions are issued in writing by the Office of the Vice Chancellor for Student Affairs. This communication is issued by the Office of Admissions and Financial Aid to reinstate a student's financial aid package.

If a student meets the conditions regarding his or her academic progress or those related to any academic

sanction, he or she will be eligible to receive financial aid during the following enrollment period.

### STUDENT RIGHTS AND RESPONSIBILITIES

A Students' Rights and Responsibilities Manual, available to all students, sets forth the rights of students, along with corresponding responsibilities. This document also addresses issues associated with the relationship between the student and the University. It provides information on protection in academic pursuit and privacy of records; sets forth all the conditions for responsible behavior on the campus; lists the various appeal and grievance procedures available to students; and includes a section on student discipline with control and discipline of college students. This document complies with relevant federal regulations such as the awarding of financial aid, protection of privacy of records, and equal access/equal opportunity.

### FAMILY RIGHTS AND PRIVACY ACT INFORMATION STATEMENT

Universidad del Turabo has a longstanding commitment to protect students' rights and privacy of information. This commitment will continue as a matter of University practice. The University complies with the provisions of the federal Family Rights and Privacy Act. These federal and state requirements relate to accessibility and confidentiality, provide pertinent and detailed information concerning classification of student records, and access and release provisions.

University procedures are available to students, faculty, administration, and staff in the Office of the Vice Chancellor of Students Affairs, as well as in other offices and departments of the campus. In addition, the complete procedures are published in the Student Manual.

### RELEASE OF STUDENT INFORMATION

In accordance with Public Law 93-380, FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT, students at Universidad del Turabo have the right to inspect educational records and to correct such records as warranted. The institution protects students from release of information for inspection and review unless he or she waives this right. The parent(s) of U.S.C.S.s. 152 Internal Revenue Code also has the right to inspect records, which are maintained by the University on behalf of the student.

There are two distinct categories of records: (1) directory information records, and (2) limited access records.

Directory information, which may be made public, includes the student's name, last known address, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of

attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. The office of the Vice Chancellor of Student Affairs will only release this information after the petitioner has demonstrated a legitimate need to have such information. Students who do not wish release of "directory information" must complete a statement in the Office of the Registrar no later than the last day of each term; otherwise, directory information may be disclosed by the University for legitimate purposes.

Limited access records pertain to the permanent academic records of the student, disciplinary records, financial information, and testing data. This category also includes all records maintained officially by the institution which do not come under the categories of directory information, or sole possession records. The institution will not release information in limited access records unless it has the written permission of the student or parent.

### GRADUATION REQUIREMENTS

Universidad del Turabo students will be eligible to receive academic degrees after meeting the following requirements and procedures:

Students must apply for graduation at the Registrar's Office during the period established in the academic calendar. Completion of the courses required for the degree as set down by the institution.

Completion of the number of credit hours required for the degree with a minimum grade point average of 2.00.

The minimum grade point average in the major is 2.30.

To compute the grade point average for graduation, only successfully completed courses which were requirements for the degree or certificate will be considered.

All students who enter Universidad del Turabo will be subject to the graduation requirements in force during the year they were admitted. Nevertheless, if the curriculum was modified, the student can choose to graduate under the new curriculum, but not by a combination of both.

Transfer students must complete at Universidad del Turabo at least the last thirty (30) credit hours of a bachelor's degree and the last twelve (12) credit hours of an associate degree. The student must complete the last twelve (12) credits of its major at Universidad del Turabo.

Students must also settle any debts with the institution. No document certifying graduation will be given until documentation has been presented that there are no outstanding debts.

All students applying for readmission will be subject to the requirements for graduation in effect during the year they are readmitted.

Commencement exercises will be held once a year, at the end of the second academic semester. Students who meet graduation requirements at the end of any term or summer session may apply to the Office of the Registrar for certification to that effect.

### HONOR AWARDS

Students are eligible for the following honor designations according to their cumulative grade point average:

#### Certificates

Honors	Average of 3.75 to 3.89
High Honors	Average of 3.90 to 4.00

Transfer students may graduate with honors if they obtain a minimum of 20 credits and an average of 3.75 or higher.

#### Associate Degrees

Cum Laude	Average of 3.50 to 3.69
Magna Cum Laude	Average of 3.70 to 3.89
Summa Cum Laude	Average of 3.90 to 4.00

Transfer students may graduate with honors if they obtain a minimum of 60 credits and an average of 3.50 or higher.

### COURSE VALIDITY

Credits earned through courses taken at Universidad del Turabo or at an accredited institution will be valid for a maximum of 12 years. After that period the credits will lapse.

### STUDENT SERVICES

Universidad del Turabo improves and advances the student experience by streamlining its student services into one centralized location, the Integrated Student Services Center (CISE, from its Spanish acronym). The purpose of this Center is to provide competent professional assistance in two areas: (1) enrollment management services and (2) academic and personal support services. The Vice Chancellor of Student Affairs oversees the development and growth of these areas.

#### ENROLLMENT MANAGEMENT SERVICES

The **Office of Marketing and Recruitment** recruits new students, transfers and readmissions. It disseminates information on UT academic offerings, strengths, and services through various promotion and recruitment activities. It coordinates and offers orientation activities to recruit students into doctoral and graduate programs by means of integrated campaigns. The Office develops year-

round activities of recruitment with key personnel of the schools.

The **Admission and Financial Aid Office** offers financial aid orientation, evaluates and processes admission requests, and admits students within the parameters established by each school. It also analyzes documentation and assigns state, federal and institutional funds, while maintaining communication with the student on the status of his/her request for admission and financial aids. Among others essential functions, the Office coordinates the process of interviews and admission of prospective students with the different schools. It also administers and coordinates Title IV programs and processes the funds of proposals, athletic, administrative and honor scholarships.

The **Bursar** is responsible for applying the fee policies and administering the payment plans that guarantee institutional incomes. This officer notifies and monitors the compliance of the fiscal policy established by the Vice Presidency of Financial Affairs, establishes the process of validation of registration, administers the application of federal funds refund policies and registers the private and public contracts of agencies. It also applies refund processes and the emission of checks to students, registers payments and maintains the collection system of the students' accounts.

The **Office of the Registrar**, in addition to handling student registration each term, provides various services for students. This office provides transcripts of students' academic records, verifies and certifies enrollment status, mails final grade reports, processes grade changes, orders and issues diplomas, processes changes in name, address, and telephone number.

#### ACADEMIC AND PERSONAL SUPPORT SERVICES

These services are provided in a variety of forms and settings, including individual counseling and educational groups, workshops, seminars, formal classes, as well as the traditional one-on-one tutorial sessions. The Center's staff has been professionally trained and they are committed to helping students to make the most of their university experience. All services are provided on a strictly confidential basis, and respect the individuality of each student.

**Counseling services** are available to students with educational, personal, and decision-making concerns. A wide variety of programs, workshops, counseling opportunities and informational materials are provided to help Turabo students meet the challenges of university programs and experiences. There are individual counseling and testing services for occupational and educational assessment. These services are offered by two units, each

targeting different needs and special populations: (1) Quality of Life and Student Well-Being Services and (2) Student Development and Retention Services. These services are offered from 8:00 am to 7:00 pm, Monday through Thursday, 8:00 to 5:00 pm on Fridays and from 9:00 to 12:00 on Saturdays.

The **Quality of Life and Student Well-Being Office** designs, develops, and promotes an extensive system of programs, services and activities that facilitate the integration of multidisciplinary resources to create an atmosphere of respect, welfare and quality of life. The office promotes an ecological model of health, which encourages healthy life styles through activities related to awareness and education on topics such as violence prevention and the use of drugs, alcohol, and cigarettes. The Office encompasses, counseling and multidisciplinary services, a health services program, an education and prevention program (PREVEA), a community connection program, volunteer projects and student organization support. It also serves as a resource center for Internship and practicum students.

In addition, this office coordinates the “Easy Access” Program, which offers special services for disabled students. These services include: parking, educational goal planning, tutoring and other student needs. The students should register with the program at the beginning of their admission process.

The **Student Development and Retention Services** office is responsible for promoting the integration and adjustment of new students. It articulates the administration of diagnostic tests and carries out the academic orientation and counseling of first and second year students. The Office articulates projects for the improvement of the academic performance and retention in association with the schools and off-campus centers. Individual and group counseling services, tutoring, extra-curricular activities and peer support groups are offered to improve new students’ adjustment processes to university life.

**Academic Development and Support Services** are available through two complementary programs of the Student Development and Retention Services Office. Their services are developed through funds awarded by the federal Department of Education and by other institutional funds. The Complementary Educational Services Program and the Supplementary Instruction Program promote support services for students with academic difficulties through tutoring, mentorships and supplementary instructional activities.

**Career and Placement Services** are offered by the Office of the Assistant Vice Chancellor of Career and Placement. This office is responsible for satisfying the employment needs of students, alumni and community members and for

improving their employment skills, increasing productivity and competences, thus bringing about the client’s effective placement. The office functions as a “one-stop” career center and through diverse alliances with the government’s Employment Center (Consortium Caguas-Guayama), integrated services are offered, such as counseling, vocational testing, evaluation of employment skills, preparation of résumés and letters of presentation, referrals to governmental agencies and access to Puerto Rico’s Department of Labor updated employment offerings through a technological laboratory of resources .

To assist students in career planning, a career reference library is provided with the center’s printed, audio and videotape materials about specific occupations, skills, and requirements for jobs, educational and career matters. The computerized occupational information system provides current educational and labor market requirements, skills specification and other information to be used in the decision-making process. Consulting services for student, faculty, administration and community members are offered through this unit. An active job placement assistance program maintains continuous communication with employers. A computer database of prospective employers is in use. Students may register for part-time and full-time jobs or seasonal employment while pursuing their academic programs. Vocational counseling services are also offered to high school students from nearby communities.

The services are sponsored by institutional funds and with funds from two federal proposals: Hispanic-Serving Institutions Assisting Communities (HSIAC) Program and AmeriCorps Vista.

The **Scholarship and Internship Program** provides the opportunity for active students to request special scholarships and permits students to participate in academic-professional and research opportunities in different companies and educational institutions globally. The activities promoted by this office complement the student’s academic development and allow the development of professional abilities and personal skills to be integrated successfully in the work force. It also assists talented high school students in completing their university studies in the SUAGM. This program is funded by corporate, private, public, and institutional funds.

### HEALTH SERVICES

Services are located in the CISE building. The health services staff consists of a part-time physician and a registered nurse. Their primary purpose is to provide students with emergency and ambulatory services. The student health services stress the concept of well-being and preventive medicine. Health education and counseling are available as well as treatment for medical problems. The

staff is on duty Monday through Thursday from 8:00 a.m. to 8:30 p.m., Friday from 8:00 a.m. to 5:00 p.m. and Saturday from 8:00 a.m. – 12:00 p.m., and is available for emergencies, first aid, referral sources and medical counseling. Basic medical care is provided, but students are ultimately responsible for making arrangements for their own complete health care.

#### SERVICES FOR DISABLED STUDENTS

Federal and state regulations guarantee disabled students equal opportunity in post-secondary education. The university has created special support services to assist disabled students. These services include, but are not limited to, assistance in registration, counseling, financial aid, readers for the blind, interpreters for the deaf, class notes, as well as individualized classes and/or tutoring. Transportation services are available through a special partnership between Universidad del Turabo and the government's Department of Vocational Rehabilitation. Services are coordinated in the Quality of Life and Student Well-Being Office.

#### ARMY, AIR FORCE (ROTC)

A formal agreement has been established between Universidad del Turabo and University of Puerto Rico for cross-enrollment of students in the Army Reserve Officers Training Corps (ROTC) and the Air Force Training Corps.

Students from Universidad del Turabo are authorized to enroll and attend classes in the ROTC Program at the University of Puerto Rico. Those courses will be considered as Universidad del Turabo resident courses. Credit will be granted and students will be entered in the official academic record.

Students will not be charged for courses taken in the ROTC Program. The United States Army and Air force through the University of Puerto Rico will provide ROTC textbooks, military type equipment, uniforms and military training. Students will have equal opportunity to compete for two and three year scholarships on a nationally competitive basis.

Semester credit hours for ROTC courses are as follow (Military Science-MS)

MSI 2 credit hours (Fall Semester)  
(1 hour classroom; 1 hour Leadership Lab)

MSI 2 credit hours (Spring Semester)  
(1 hour classroom; 1 hour Leadership Lab)

MSII 3 credit hours (Fall Semester)  
(2 hours classroom; 1 hour Leadership Lab)

MSII 3 credit hours (Spring Semester)  
(2 hours classroom; 1 hour Leadership Lab)

MSIII 4 credit hours (Fall Semester)  
(3 hours classroom; 1 hour Leadership Lab)

MSIII 4 credit hours (Spring Semester)  
(3 hours classroom; 1 hour Leadership Lab)

MSIV 4 credit hours (Fall Semester)  
(3 hours classroom; 1 hour Leadership Lab)

MS 400-01 3 credit hours (Advanced Camp, Fort Riley, Kansas)

MS 300-01 2 credit hours (Basic Camp, Fort Knox, Kentucky)

AS 100 2 credit hours (Fall & Spring)  
(1 hour classroom; 1 hour Semester Leadership Lab)

AS 200 2 credit hours (Fall & Spring)  
(1 hour classroom; 1 hour Semester Leadership Lab)

AS 300 4 credit hours (Fall & Spring)  
(3 hours classroom; 1 hour Semester Leadership Lab)

AS 400 4 credit hours (Fall & Spring)  
(3 hours classroom; 1 hour Semester Leadership Lab)

#### BOOKSTORE

Universidad del Turabo has a bookstore on campus. The store is operated as a service to students, faculty and staff. Textbooks, school and office supplies, and other course-related materials are available. In addition, gift items, stationery, greeting cards, paperbacks, and other articles are in stock.

#### AUTOMOBILES ON CAMPUS

The security director enforces traffic and parking regulations on and around campus. Traffic tickets may be issued for traffic and parking violations. Student parking stickers are issued to each student upon registration. The cost of parking is \$.35 for students and \$1.00 for visitors.

#### DINING SERVICES

The Student Dining Service provides a variety of options for students who wish to dine on-campus. The cafeteria offers breakfast, lunch and dinner, Monday through Saturday. Hot meals and fast food are available. Vending machines for snacks and refreshments are also located throughout the campus.

#### STUDENT ACTIVITIES

A combination of both extra-curricular and co-curricular activities is available on campus providing opportunities for all students to enhance their educational experience. The Office of Cultural and Social Activities is responsible for the diffusion and promotion of artistic events for the enjoyment and enrichment of the university community, according to its needs and interests. Each year, through the establishment of a visiting artist's series, outstanding musicians, singers, artists, dancers, lecturers and other performers share their talents and expertise with students. In addition to on-campus art exhibits, the academic schools present dance programs, musical concerts, athletic competitions, and theatrical productions.

### STUDENT GOVERNMENT

Through student governing bodies, students have an opportunity for self-government and to participate with the faculty and administration in formulating appropriate policies. Student Council members are elected by secret vote by the members of the Student Government Assembly. The Council meets once a month. Students are represented in the institution's governing bodies through this Council. Opinions and recommendations are presented to the Vice Chancellor of Students Affairs. Its members participate in academic, discipline, sports, and cultural activities committees.

### STUDENT PUBLICATIONS

The institutional magazine *El Turabón* is published twice a year by students of the Communications program. . It serves as a medium for all institutional activities and as a practicum experience for the students.

### STUDENT ORGANIZATIONS

According to their interests, students may join religious, social service, academic, professional, and honorary groups. A fair is held at the beginning of each term to help new students get acquainted with and select the group or groups that interest them. All students are encouraged to participate actively in clubs and organizations.

### UNIVERSIDAD DEL TURABO CHOIR

The Universidad del Turabo choir offers students the opportunity to cultivate their musical abilities and talents and enables them to represent the University in activities on and off campus.

### UNIVERSIDAD DEL TURABO THEATER WORKSHOP

The theater workshop provides students with the opportunity to develop their abilities in the performing arts. The workshop organizes and produces one play per semester for the enjoyment of the university community and the community at large.

### ATHLETIC AND INTRAMURAL PROGRAMS

Athletic and Intramural Programs within the Department of Physical Education of the School of Education play an important role in the educational process of Universidad del Turabo. The programs offer a wide range of recreational and intercollegiate competitive sports for all eligible students. Both individual and team sports have brought the university and individuals national recognition. An outstanding staff of administrators, coaches, and expert trainers work in unison to make the campus athletic programs for men and women a first-class endeavor. The university boasts 27 men's and women's varsity teams, which have won 102 champion and sub-championships since 1975. These triumphs include the record-setting achievement of winning the Intercollegiate Athletic League track and field championship 10 times since 1987. Universidad del Turabo athletes have also been champions in basketball, weight lifting, decathlon, heptathlon, cross-country, and relays. Each year, the intramural program allows participation of more than 7,000 active and passive students and faculty members. The teams are called the "Taínos" with their orange, black, and white colors. The sports facilities include indoor basketball and volleyball courts, tennis courts, free weight and Hammer machines gym, a 400 meter-track, swimming pool, baseball park, jogging trail and wellness center.

### VETERANS' SERVICES

The Veterans Services Office, located in the Registrar's Office, is primarily concerned with the motivation of veterans and their dependents to effectively exercise their right to an education.

Veterans are assisted in the completion and processing of required documents for the purpose of establishing eligibility, certification of services and academic progress. These services are offered in close coordination with the Veterans Administration Office of Puerto Rico.

Veterans and their beneficiaries must complete their program of studies within the time established by their curriculum. Students who extend their studies beyond the time established by the program cannot continue to receive veterans' benefits. If the student is a recipient of the Pell Grant, he may resort to the 150% additional time established by the institutional standard for Satisfactory Academic Progress. Veterans will be evaluated utilizing both veterans' benefits and Pell Grant criteria, if they are beneficiaries of these.

Veteran's Administration Office will not pay courses repeated in order to raise GPA. It will only pay failed courses (F, NP-Failure) or those that require a minimum approval grade. Veteran's Administration Office will reduce benefits to the student as of the last day of attendance to a class.

### EDUCATIONAL RESOURCES

One of the most important features of Universidad del Turabo is the Academic Resources Center, under the Office of the Vice Chancellor of Information Resources. The center is dedicated exclusively to helping students and faculty share a variety of academic resources that support, complement and enrich the teaching and learning processes. The center is comprised of the following five areas:

#### INFORMATION RESOURCE CENTER

The Information Resource Center provides library resources, audiovisual material, archives, computer programs, electronic information systems, microcomputers, fax machines, audio and recording studios, graphic arts workshops, audience halls, and a gallery.

#### LIBRARY SERVICES

The Library Services Division provides printed resources, electronic resources through the virtual library, audiovisual material, and technological systems that facilitate obtaining information. In order to train students in the effective use of the library services and resources, the division maintains a program of bibliographic instruction, given both in the classroom and in the library. Its reference services have the latest in information systems and a wide variety of reference books. Access to resources is gained through an online electronic catalog (OPAC) that allows subject searches in Spanish and English. This electronic catalog provides access to external resources at many institutions in Puerto Rico and the world, through the Internet.

The Center has access to other databases and various full-text databases such as: ProQuest, DIALOG, Books in Print, Literary Market Place, ULRICH, The Engineering Index, ERIC, Cambridge Index, Chemical Abstracts, and HAPI. Local databases available are CONUCO, PCIP, ITS and ADENDI.

#### COLLECTIONS DEVELOPMENT

The internal collection of Universidad del Turabo totals up to 140,000 volumes. This includes books, journals, documents, microfilms, recordings, films, maps, drafts, plates, photographs, transparencies, slides, models and objects. The Center's main objective is to develop collections that respond to academic needs, contribute to the humanistic education of the students, facilitate research and ratify accreditation.

#### COMPUTER RESOURCES

There are 115 computers for student and faculty use at various service points throughout the library. There are eleven computers in the Reference and Periodicals Service Area, two in the Circulation and Reserve Service Area, and eight in the library lobby. In the Electronic Information

Room (Open Access Computer Lab), there are 74 computers and the Faculty Development Center has 20 computers available.

#### EDUCATIONAL TECHNOLOGY

The Educational Technology Division studies teaching methods, styles and strategies, so as to coordinate with the faculty in the creation of programs to improve curriculum, test new teaching methods, and promote educational innovations. This division is also responsible for designing, producing and integrating into the curriculum didactic resources and materials that promote systematic improvement and innovation in university education. The integration of educational resources into the teaching-learning process is aimed at enabling faculty to attain their educational goals and the students to obtain a high level of academic achievement.

#### DISTANCE EDUCATION

Distance Education is a special program component offered by Universidad del Turabo. Its main objective is to serve as a facilitating unit to support program offerings. It also supports educational and service programs that depend on one of the distance education modalities requiring the transfer of knowledge through the use of technology. At Universidad del Turabo, distance education focuses on four delivery modalities: web-based, web-supplemented, web-enhanced and Instructional Television Fixed Services (ITFS). A master's degree program in business administration is being offered online by the School of Business Administration. The School of Education is offering courses in education via television media (ITSF). For additional information, please contact the Admissions Office or academic schools.

#### JOSEFINA CAMACHO DE LA NUEZ MUSEUM AND CENTER FOR HUMANISTIC STUDIES

The Museo y Centro de Estudios Humanísticos Dra. Josefina Camacho de la Nuez of the Universidad del Turabo has been a museum and center for the study of the humanities at the Universidad del Turabo since 1980's. Its mission is to collect, preserve, study, and disseminate the artistic and humanistic expressions of the regional and national Puerto Rican culture for the enjoyment and benefit of the university community and the general public. The museum started in one of the wooden historic buildings on campus of the sugar cane plantation Santa Juana. The Museum has a permanent collection of 3,000 objects. It has recently inaugurated a new 25,000 sq. ft. state of the facilities with galleries dedicated to the Archaeology of Punta Canelero, Puerto Rican Folk Arts, Puerto Rican Poster Collection, the History of the Central Oriental Region, Colonial Paintings from Latin America of the Lola and Antonio Roig collection, the Ana G. Méndez historical collection and a rotating exhibition space. It also has an Education Learning Center,

the Walter Murray Chiesa Folk Art Archives, a 209-seat auditorium, an interior sculpture garden, a museum store and a café.

### EVENING AND SATURDAY PROGRAM

Students may enroll in the regular academic programs offered by the Evening and Weekend College Program. The evening division operates Monday through Thursday from 12:00 noon to 10:00 p.m., and the Weekend College opens from 12:00 noon to 9:00 p.m. on Friday, and from 7:30 a.m. to 4:30 p.m. on Saturday.

### CONTINUING EDUCATION

The Continuing Education Program endeavors to strengthen social structure and to foster and develop academic programs according to the educational needs of the individual. These programs do not necessarily function under traditional academic rules, and their intention is to: Update the student's knowledge.

Supply educational opportunities for personal growth to people from a variety of educational backgrounds, thus satisfying certain social, personal or occupational needs.

Implement professional training, both on-campus and in-house, to enhance the occupational advancement and personal development of personnel in the public and private sectors.

Promote community activities that explore and seek solutions to social, political, and economic problems.

Organize service programs for people who want to enrich their leisure time.

The program designs seminars, continuing education courses, conferences and life enrichment courses. Industries, government agencies, community institutions and the community in general benefit from this program.

### SCHOOL OF PROFESSIONAL STUDIES AHORA PROGRAM

The mission of the AHORA Program of the School of Professional Studies is to provide an accelerated educational process to adult students. The program differs from traditional methods of instruction in because the professional experience of participants is incorporated into the classroom to create an interactive, challenging and dynamic environment. Faculty members have professional experience and have been specially prepared to work with adults as innovative educational facilitators. AHORA is designed exclusively for the adult student; it offers a professional environment, as well as integrated, personalized and individualized services. To fulfill this mission, the School of Professional Studies intends to:

Promote adults to value continuous learning and increase their contribution to the world of employment

Facilitate adult students in attaining their educational goals

Create a learning community that facilitates building new knowledge which is based on and is applicable to the professional and personal reality of adults

Provide integrated student services of quality and easy accessibility to adult students

Recruit and develop staff who knows and are able to meet the needs of adult students effectively

Integrate technology into the academic, service and administrative processes

Develop academic offerings that respond to the present needs of the professional and business world

Establish a continuous process of feedback and assessment of all the processes and services.

### DESCRIPTION OF THE ACCELERATED PROGRAM OF STUDIES

The AHORA Program is accelerated because all of its courses are offered in five or eight week sessions. During each session, classes meet once a week for four hours. The accelerated methodology is based on a learning process shared between the professor and the student. Each student receives a module which serves as a study guide and indicates the assignments and activities that must be completed to prepare for class. Our faculty is specially selected and trained to work with adult students through the accelerated mode, facilitating a class environment where learning is built on experiences and the assignments performed by the students. This model of accelerated studies can be applied to the different academic programs of the institution, to new academic programs or any other academic program where adult students participate. The courses are offered evenings and Saturdays (morning and afternoon). The student may take a maximum of two classes per session, completing six credits every five or eight weeks. Registration is continuous, with courses beginning fourteen times a year, and the possibility of completing up to fifty-four credits in an academic year. This way, the program provides greater flexibility for students, since they can accelerate their academic progress or design a class program that conforms to different commitments they may have during the year.

### ADMISSIONS REQUIREMENTS

To fulfill its mission and goals, the AHORA Program admits only adult students who meet the following with academic and professional requirements:

- 23 years of age or older
- 3 years of work experience
- 24 credits of academic work at the postsecondary level

### ACADEMIC PROGRAMS

Presently, the School of Professional Studies offers accelerated studies in the programs at Universidad del Turabo which are listed below.

Bachelor's Degree in:

- Management
- Accounting
- Marketing
- Computerized Information Systems
- Office Systems
- Preschool Education (Cayey Off-campus Center)
- Social Sciences: Criminology

Master's Degree in:

- Marketing
- Human Resources
- Criminal Justice

### OFF-CAMPUS CENTERS

#### BARCELONETA

for its spanish acronym

Griselda Correa, Acting Director

[gcorrea@suagm.edu](mailto:gcorrea@suagm.edu)

Evelyn Rodríguez, Recruitment Officer

[evrodriguez@suagm.edu](mailto:evrodriguez@suagm.edu)

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#### Physical Address

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Barceloneta, PR 00617

Phone: (787) 846-1777

Fax: (787) 846-1784

#### CAYEY

Juan Rosado Cardona, Director

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Cayey, Puerto Rico 00737

#### Physical Address

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Antonio R. Barceló Ave., Cayey, Puerto Rico

Phone: (787) 263-2177

Fax: (787) 263-0277

#### ISABELA

Carmen Rivera, Director

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PO Box 807  
Isabela, Puerto Rico 00662-0807

#### Physical Address

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Isabela, Puerto Rico

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Fax: (787) 830-5070

#### NAGUABO

Glorymari Cruz, Director

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Naguabo, Puerto Rico 00718

#### Physical Address

Juan J. Maunes High School  
Baldorioty de Castro Street, Barriada Buenos Aires  
Naguabo, Puerto Rico 00718

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Fax: (787) 874-1366

#### YABUCOA

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#### PONCE

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**PRINCIPAL CAMPUS**

Dennis Alicea, Chancellor  
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Gurabo, Puerto Rico

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Fax: (787) 744-5394



**Associate Degrees  
& Technical Programs**

**Academic Offering**

Programs	Principal Campus	Off-Campus Centers					
		Barceloneta	Cayey	Isabela	Naguabo	Yabucoa	Ponce
<b>Busines Administration</b>							
Accounting	x		x			x	x
Management	x		x			x	x
Computerized Information Systems	x		x	x		x	x
Office Administration							
Emergency Management & Disaster Recovery	x	x					
Hotel Administration and Tourism				x			x
<b>Education</b>							
Personal Training	x						
Sports Training	x						
<b>Engineering</b>							
Electronic Engineering Technology	x	x					
Mechanical Engineering Technology	x	x					
Quality Control Engineering Technology	x	x					
Computer Technology & Networks		x				x	
Certif. Electric Engineering Tech & Renewable Energy		x					
<b>International School of Design</b>							
Architectural Drafting	x	x				x	
Fashion Design	x	x					
Web Design	x	x					
<b>Health Sciences</b>							
Veterinary Technician	x	x	x			x	x
<b>Social and Human Sciences</b>							
General Social Sciences	x		x				
Public Administration	x						
Penal Justice with Security and Protection	x						x
Penal Justice with Correctional Security	x						x
<b>Science and Technology</b>							
Biotechnology	x	x					
Pharmaceutical and Chemical Operations	x	x					
Biopharma Technology	x	x					
Environmental Technology		x					
<b>Technical Programs</b>							
<b><u>Certificates:</u></b>							
Computerized Systems	x		x		x	x	x
Early Childhood Teacher's Aide	x	x	x	x	x	x	x
Information Processing with Medical Billing	x		x		x	x	x
Licensed Nursing Practice	x		x	x	x		x
Paralegal Technician	x		x		x		
<b><u>Associate Degrees:</u></b>							
Nursing			x	x	x		x
Respiratory Therapy	x	x	x	x		x	x
Pharmacy Technician	x	x	x	x		x	x

# GENERAL EDUCATION DEANSHIP

## OFFICE OF THE DEAN OF GENERAL EDUCATION

The Office of the Dean of General Education was created in February 2012 to address the particular needs of new students admitted to the University. In addition to offering first-year and second-year courses in the General Education Component (GEC), the Office of the Dean of General Education provides an array of support services to students in their first and second year. Additionally, advanced undergraduate courses in English, Spanish, and History are offered as a service to Education majors or those interested in pursuing further study in those areas. Although it is not a degree granting component of the institution, the Office works closely with all of the schools and offices of the university to promote the success of all students.

### MISSION

The mission of the General Education Component (GEC) of the Universidad del Turabo is to provide students with fundamental intellectual and critical thinking skills to ensure that students are equipped to be responsible members of a global and technological society.

In such, the GEC aims to prepare students with the necessary skills in oral and written communication, knowledge of global and historical issues, mathematic and scientific reasoning, technological competencies, and biological and social aspects of humans

### VISION

The vision of GEC is to provide students with a breath of knowledge and experiences to think and reason across disciplines so that they are successful both inside and outside the academic world.

### GENERAL GOALS

The Office of the Dean of General Education aims to develop the following knowledge, skills, and attitudes in all students.

- Analyze the importance of historical and current world events
- Understand the multi-disciplinary nature of learning and problem solving
- Value the relationship and contribution of the arts and the humanities in society's development
- Apply ethical values and principles as a responsible citizen
- Recognize the importance of the conservation of nature and the environment
- Respect human rights and individual and cultural differences
- Utilize critical thinking skills to solve problems
- Communicate effectively in oral and written Spanish
- Functional communication in oral and written English as a second language
- Apply mathematical reasoning skills and scientific inquiry methods
- Achieve literacy in technology

### STAFF

**Félix R. Huertas González** / Dean

**Philip Murray Finley** / Associate Dean

**Lorna Polo Alvarado** / Language Department Director

**Juan E. Roque Rivera** / Humanities and Social Sciences Department Director

**Ángel Ojeda Castro** / Coordinator of Mathematics

### FACULTY

**José C. Arroyo-Muñoz** / Instructor  
PhD (c), Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Catherine Blackburn** / Professor  
PhD, Universidad de Puerto Rico

**Ileana Canetti-Mirabal** / Associate Professor  
PhD (c), New York University

**José M. Castro-de León** / Professor  
MA Ed, University of Puerto Rico

**Beatriz Cruz-Sotomayor** / Assistant Professor  
PhD, University of Puerto Rico

**Lourdes Encarnación-Conde** / Assistant Professor  
EdD, Interamerican University

**David Figueroa** / Instructor  
MA, University of Puerto Rico

**Samuel Flores-Santiago** / Instructor  
MA, University of Puerto Rico

**Félix R. Huertas González** / Associate Professor  
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**María de Jesús García-Moreno** / Professor  
MA, Middlebury College

**José R. Gómez-Blanco** / Instructor  
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**Wilfredo González-Barreto** / Associate Professor  
JD, University of Puerto Rico

**Gloria Maldonado-Pérez** / Professor  
MA, University of Puerto Rico

**Hiram Marrero-Rosario** / Instructor  
JD, City University of New York

**Evelyn Martínez-Sanabria** / Professor  
EdD, Universidad del Turabo

**M. Elinor Medina-Callarotti** / Visiting Professor  
MEd, Harvard University

**Carmen Mercado-Villafañe** / Associate Professor  
MA, Interamerican University

**Aixa J. Mont-Díaz** / Assistant Professor  
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**Philip R. Murray-Finely** / Instructor  
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**José Orlando-Sued** / Instructor  
MA, Universidad de Puerto Rico

**Ileana Muñoz Landrón** / Instructor  
MA, Universidad de Puerto Rico

**Rafael Pabellón-Rivera** / Associate Professor  
EdD(c), University of Puerto Rico

**Lorna Polo-Alvarado** / Assistant Professor  
PhD, University of Puerto Rico

**Sandra Pulliza-Polo** / Professor  
EdD, Interamerican University

**Liza M. Pérez-Sánchez** / Instructor

PhD(c) Universidad de Salamanca

**Jennet Rodríguez-Betancourt** / Associate Professor  
PhD (c) Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Juanita Rodríguez-Betancourt** / Associate Professor  
PhD (c) Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Miguel Rodríguez-López** / Associate Professor  
MA, Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Juan E. Roque Rivera** / Associate Professor  
PhD, Universidad de Puerto Rico

**Cristóbal E. Santiago-Berríos** / Instructor  
JD, Interamerican University of Puerto Rico

**Charles A. Smith-Speed** / Professor  
PhD (c), Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Judith Soto-Ledesma** / Associate Professor  
MA, University of Puerto Rico

**María E. Suárez-Morales** / Associate Professor  
MA, Catholic University of America

**Julio Vélez-Ortiz** / Instructor  
PhD (c), Centro de Estudios Avanzados de Puerto Rico y el Caribe

**Héctor Vissepó-Castro** / Associate Professor  
PhD, Universidad Complutense

**Zoran Vujisic-Jovovic** / Associate Professor  
PhD, Rhodes University

## COURSE DESCRIPTIONS

(Courses marked with @ could be offered in both modalities, traditional or online.)

### ART 101 Art Appreciation Three Credits

The course deals with concepts of aesthetic organization: composition, elements, perspective, form, value, texture and theory of color. Pictorial techniques and drawing are also discussed.

**ART 121**

**Drawing I**

**Three Credits**

The course covers basic principles of drawing. It includes training in the different media of graphic expression, along with exercises in structure, proportion, light and shadow, rhythm, balance, and the basic concepts of perspective.

**ART 122**

**Drawing II**

**Three Credits**

This is a continuation course of ART 121 that develops more advanced principles of drawing. It includes further development in the different media of graphic expression, along with exercises in structure, proportion, light and shadow, rhythm, balance, and the basic concepts of perspective.

**ART 201**

**Theater Arts I**

**Three Credits**

The course centers on drama from a historical perspective, and includes an introduction to the theater arts. Students may be assigned to participate in small-scale productions.

**ART 202**

**Theater Arts II**

**Three Credits**

This is a continuation course that develops more advanced topics in theater arts. It includes further development of drama from a historical perspective, and includes an introduction to the theater arts. Students may be assigned to participate in small-scale productions.

**ENGL 152**

**Fundamentals of Reading and Writing**

**Three Credits**

This course develops and strengthens students' listening, speaking, reading, and writing proficiency in English. It includes grammar, vocabulary expansion, reading skills, writing mechanics, sentence writing and descriptive, narrative, opinion, and cause/effect paragraphs.

Requisites: \*Placement Exam or CEEB scores determined by the Department of Languages

**ENGL 152E**

**Fundamentals of Reading and Writing**

**Three Credits**

This course develops and strengthens students' listening, speaking, reading, and writing proficiency in English. It includes grammar, vocabulary expansion, reading skills, writing mechanics, sentence writing and descriptive, narrative, opinion, and cause/effect paragraphs. In addition to class hours, students must participate in two hours per

week of English language laboratory tutoring and one hour per week of independent practice utilizing a virtual platform.

Requisites: \*Placement Exam or CEEB scores determined by the Department of Languages

**ENGL 153 @**

**Advanced Communicative English**

**Three Credits**

The purpose of this course is to introduce students to the process of essay writing. Students will learn to analyze essays, organize ideas, support a thesis statement, use appropriate grammar, and apply the cohesive elements of writing.

Requisites: \* ENGL 152 or Placement Exam or CEEB scores determined by the Department of Languages

**ENGL 205**

**Introduction to Literary Genres I**

**Three Credits**

In this course, the students will read, study and analyze the different prose genre: the essay, the short story and the novel, at an introductory level. They will become familiar with the various strategies and techniques used in literature to enhance expression: style, structure, diction, imagery, narrative point-of-view, irony, and so forth. They will practice written responses to the reading examples. Writing well about literature is a key component of the class.

Requisites: ENGL 152-153

**ENGL 206**

**Introduction to Literary Genres II**

**Three Credits**

In this course, the students will read, study and analyze poetry and drama at an introductory level. They will see how the various strategies and techniques are used in literature to enhance expression introduced in English 205: style, structure, diction, imagery, narrative voice, irony, and so forth, are used and intensified in poetry and drama. They will respond orally and in writing to the readings. Writing about literature is a key component of the class.

Requisites: ENGL 152-153-205

**ENGL 211-212**

**Business English I and II**

**Six Credits**

This is a required course for students majoring in business administration. Emphasis is on grammar, as well as oral and written business English. Students will practice writing a variety of business letters; they will also prepare a résumé and participate in role-playing for job interviews.

Requisites: ENGL 152-153

**ENGL 231 @**  
**Research and Writing**  
**Three Credits**

This course focuses on the basic strategies and techniques for writing clear, coherent, and precise essays on varied topics. Special emphasis will be given to such elements in the writing process as pre-writing, organizing details, editing, correcting and re-writing. The first part of the course will then lead into the final research and writing project. The course is a somewhat more advanced one in expository writing and focuses on the research techniques needed for the preparation of a final research project.

Requisites: ENGL 152-153

**ENGL 245**  
**Introduction to Grammar**  
**Three Credits**

This is a required course for English majors who are planning to teach English as a Second Language. It will give the students sufficient practice exercises in English grammar to improve their skills so as to be effective teachers. It will enable the students to attain success in written communication through practice with grammar and language use. Emphasis will be on the traditional approach to English grammar and preparation for the English Teachers Examination, a certification requirement enforced by the Department of Education of Puerto Rico.

Requisites: ENGL 152-153

**ENGL 317**  
**English Literature I**  
**Three Credits**

This is an intensive reading course in English literature that covers from Chaucer to the neoclassical era and from the Romantic era to the present.

Requisites: ENGL 205-206

**ENGL 321**  
**American Literature I**  
**Three Credits**

This is a survey course which offers a chronological overview of the literature of the United States from colonial times to the present.

Requisites: ENGL 205-206

**ENGL 331**  
**Oral Communication**  
**Three Credits**

The course deals with the theory and practice of public speaking. It emphasizes the importance of nonverbal communication (body language, eye contact, attire) and verbal techniques (pronunciation, intonation, volume, rate).

Cross-cultural differences in the art of communication are discussed. Students will practice delivering a variety of speeches, which include self-introduction, personal experience, presentation of a guest speaker, informative, and persuasive speeches. Some speeches may require the use of visual aids.

Requisites: ENGL 152-153

**ENGL 342**  
**Adolescent Literature**  
**Three Credits**

This course is required for certification in English by the Department of Education. It centers on the study of adolescent literature and its development and relevance in American literature.

Requisites: ENGL 205-206

**ENGL 345**  
**Children's Literature**  
**Three Credits**

This course comprises an overall presentation of children's literature and its developmental stages from the sixteenth century to the present. It will also discuss the relation between the need for using different types of literature for children and children's intellectual and psychological development.

Requisites: ENGL 205-206

**ENGL 360**  
**Comparative Analysis: English and Spanish**  
**Three Credits**

This course focuses on the similarities and the differences between the English and the Spanish languages from the aspects of phonetics, syntax, lexicon, and morphology. Students should have a workable knowledge in both languages to obtain maximum benefit from this comparative analysis course. This is a required course for the English Teachers Examination, a certification requirement enforced by the Department of Education of Puerto.

Requisites: ENGL 245-371

**ENGL 371**  
**Introduction to Linguistics I**  
**Three Credits**

Introduction to basic linguistic theory, including a discussion of major models of linguistic description: the origin and historical development of language, first and second language acquisition, language variation, writing systems. This is a required course for the English Teachers Examination, a certification requirement enforced by the Department of Education of Puerto Rico.

Prerequisites: ENGL 153-245

### **FRCH 101**

#### **Basic Course in French I**

##### **Three Credits**

The purpose of this course is to familiarize students with the French language and culture through the use of readings, writing, listening, and conversational skills.

### **FRCH 102**

#### **Basic Course in French II**

##### **Three Credits**

This is a continuation course of FRCH 101 which will continue to develop students' knowledge of the French language and culture through the use of reading, writing, listening, and conversational skills.

### **FRCH 201**

#### **Intermediate French I**

##### **Three Credits**

The course centers on the study of French grammar and intermediate conversational skills, and includes practice in reading and writing.

Requisites: FRCH 101-102

### **FRCH 202**

#### **Intermediate French II**

##### **Three Credits**

This is a continuation course of FRCH 201 that will study French grammar and intermediate conversational skill, and include practice in reading and writing.

### **HIST 221**

#### **Ancient and Medieval History**

##### **Three Credits**

This course begins with an analysis of some key concepts of the discipline of history (pre-historic and historic) covering the study of ancient civilizations (Mesopotamia, Egypt, India and China), Greek and Roman, up to the Medieval period, and culminating with the fall of the Byzantine Empire.

### **HIST 230**

#### **Renaissance, Reform and the Rise of the State**

##### **Three Credits**

The course centers on the Renaissance, as well as the religious crises of the XVI, XVII and XVIII centuries.

Requisites: HUMA 115-116

### **HIST 231**

#### **European History XIX Century**

##### **Three Credits**

The course deals with the development of liberalism, nationalism and industrialization in conflict with

authoritarian forces then prevalent on the continent. Topics include the development of nations and international rivalry leading to World War I.

Requisites: HUMA 115-116

### **HIST 232**

#### **Contemporary World Problems**

##### **Three Credits**

The course studies the problems of the contemporary world and the consequences that these entail as seen in light of current events. Events occurring throughout the 20<sup>th</sup> and 21<sup>st</sup> centuries are discussed. The Cold War, colonialism, neocolonialism and globalization are discussed.

Requisites: HUMA115-116

### **HIST 253**

#### **History of Puerto Rico (Compendium)**

##### **Three Credits**

The course is a compendium of the history of Puerto Rico from prehistory to the present. The course begins with the discussion of the principle geographical aspects of Puerto Rico. Socio-economic, political, cultural, and religious issues will also be analyzed and interpreted from a panoramic perspective.

### **HIST 257**

#### **Puerto Rico in the XX Century**

##### **Three Credits**

The course deals with political, economic, social, and cultural problems beginning with the American sovereignty in 1898 up to the present.

### **HIST 261**

#### **Latin American History I**

##### **Three Credits**

The course centers on the historical evolution of Latin American countries from pre-Columbian cultures to the present.

Requisites: HUMA 115-116

### **HIST 262**

#### **Latin American History II**

##### **Three Credits**

This is a continuation course of HIST 261 which will cover past and present historical topics of Latin America.

### **HIST 273**

#### **History of the United States of America (Compendium)**

##### **Three Credits**

Studies the development of the American nation from the beginning of its society to the present. It emphasizes the evolution of political, social, and economic institutions, and the distinctive traits of its society.

**HIST 305**  
**History of the Caribbean**  
**Three Credits**

The course deals with the political, economic, social, and cultural development of the Caribbean countries.

Requisites: HUMA115-116

**HIST 320**  
**History of Africa**  
**Three Credits**

The course centers on political, economic, social and cultural development of the African countries, emphasizing the colonial period, the struggle for independence, and the rise of the new nation states.

Requisites: HUMA 115-116

**HUMA 111**  
**Civilizations and Universal Culture I**  
**Three Credits**

Study of the development of the human-being analyzing events within different civilizations and their relevance to diverse realities in the contemporary world.

**HUMA 112**  
**Civilizations and Universal Culture II**  
**Three Credits**

This is a continuation course of HUMA 111 which deals with the development of human-beings. Events within different civilizations and their relevance to diverse realities in the contemporary world will be analyzed.

Requisite: HUMA 111

**HUMA 115-116**  
**Introduction to Western Civilization I and II**  
**Six Credits**

The course is an introduction to Greek and Roman culture. Topics include drama, literature, art and philosophy, as well as the history of Christianity, medieval culture, feudalism, guilds, scholasticism, Romanesque, and gothic-style literature.

**ITAL 101**  
**Introduction to Italian I**  
**Three Credits**

This is an introductory course which will familiarize students with the Italian language and culture.

**ITAL 102**  
**Introduction to Italian II**  
**Three Credits**

This is a continuation course of ITAL 101. It will further develop students' language skills in Italian.

**ITAL 201**  
**Intermediate Italian I**  
**Three Credits**

The course deals with grammar, reading, writing, and conversation in Italian.

Requisites: ITAL 101-102

**ITAL 202**  
**Intermediate Italian II**  
**Three Credits**

This is a continuation course of ITLA 201 and will further develop Italian grammar, reading, writing, and conversation skills.

**MATH 120**  
**Introductory Algebra**  
**Three Credits**

Study of elementary algebra topics such as: theory of sets, real numbers, algebraic expressions, equations, linear inequalities and operations with polynomials.

Requisites: \* A minimum of 70% on the departmental placement test or 491-549 on the CEEB Mathematics Achievement Test.

**MATH 120E**  
**Introductory Algebra Enhanced**  
**Three Credits**

This course develops in students the basic mathematical competences in the following areas: arithmetic, algebra and geometry. The main topics covered are: arithmetic operations, equations and linear inequalities, area and perimeter of polygons and circles, and volume of solids. Special emphasis is placed on problem solving. In addition to the conference and laboratory hours, the student will practice independently in a virtual platform.

Requisites: \* A minimum of 70% on the departmental placement test or 0-490 on the CEEB Mathematics Achievement Test.

**MUSI 101**  
**Music Appreciation**  
**Three Credits**

The course centers on music as a source of aesthetic enjoyment. Students learn to recognize the forms of musical composition (folk and art songs, the fugue, the sonata, the symphony, the opera, etc.) through lectures, recordings, and demonstrations by the professor, other students, or guest artists.

### **MUSI 103**

#### **Choir I**

##### **Three Credits**

The course deals with group instruction in voice and singing. It includes interpretation of choral music, with emphasis on the folklore of Puerto Rico. The choir participates in the Institution's activities. The course is open to all students.

### **PORT 101**

#### **Introduction to the Study of Portuguese I**

##### **Three Credits**

PORT 101 aims to familiarize and guide students in their first contact with the Portuguese language and Brazilian culture. It focuses on basic pronunciation and intonation knowledge; as well as, the acquisition of essential everyday lexicon and grammar rules necessary for effective communication. An initial contact with the Brazilian culture through the use of cultural elements such as: music, literature, and carnival will also be provided. Additionally, fundamental differences between the Portuguese language spoken in Brazil and in Portugal will be examined.

### **PORT 102**

#### **Introduction to the Study of Portuguese II**

##### **Three Credits**

PORT 102 continues to present basic knowledge that allows students to achieve effective communication in conversational Portuguese. Activities and readings will be presented to improve pronunciation, intonation, comprehension, and basic writing skills. Additionally, students will be exposed to Brazilian culture through the study of: soap operas, ecology, education, cities, and legends, among others.

### **PHIL 201**

#### **Introduction to Philosophy I**

##### **Three Credits**

Study of the nature and development of philosophical thoughts and its problems. Studies the principal philosophers for Greece to the present.

Requisites: HUMA 115-116

### **SOSC 111**

#### **Individual, Community, Government and Social Responsibility I**

##### **Three Credits**

The course deals with civic, social, cultural, and psychological elements of individuals in society. Emphasis is on personal, interpersonal and social dimensions.

### **SOSC 112**

#### **Individual, Community, Government and Social Responsibility II**

##### **Three Credits**

This is a continuation course of SOSC 111 which centers on the study of civic, social, cultural, and psychological elements of individuals in society, with emphasis on citizenship, political, economic and environmental dimensions.

### **SPAN 107**

#### **Fundamentals of Reading and Writing Bilingual I**

##### **Three Credits**

The course emphasizes the development of reading, writing, and speaking skills of for students of Spanish as a second language. The course gives emphasis to vocabulary enrichment and grammar from a bilingual point of view. Students are required to attend a weekly session in the language laboratory.

### **SPAN 108**

#### **Fundamentals of Reading and Writing Bilingual II**

##### **Three Credits**

This is a continuation course which continues to develop students' reading, writing, and speaking skills in Spanish as a second language. It will cover writing techniques to develop paragraphs, letters, and resúmenes.

### **SPAN 141**

#### **Spanish as a Foreign Language I**

##### **Three Credits**

Spanish 141 aims to familiarize and guide students in their first contact with the language and culture of Puerto Rican Spanish. The course presents basic concepts in language and culture which will allow students to achieve effective oral communication. It focuses on the teaching of pronunciation and intonation of the language. Additionally, the course concentrates on the acquisition of vocabulary needed for daily use, the use of vocabulary in context, and the creation of phrases and sentences utilizing acquired vocabulary. Besides class contact hours, students will engage in independent practice in a virtual platform.

**SPAN 152**

**Fundamentals of Reading and Writing**

**Three Credits**

This course develops analytical reading and writing skills. Patterns of syntactic construction will be studied. The course emphasizes the importance of grammar, unity, coherence, and organization in exposition and argumentation.

Requisites: \*Placement Exam or CEEB scores determined by the Department of Languages

**SPAN 152E**

**Fundamentals of Reading and Writing Enhanced**

**Three Credits**

This course develops analytical reading and writing skills. It also enhances writing mechanics and grammar skills. Patterns of syntactic construction will be studied. The course emphasizes the importance of grammar, unity, coherence, and organization in exposition and argumentation. Besides classroom hours, students must attend two hours of laboratory tutoring weekly and one hour per week of independent practice utilizing a virtual platform.

Requisites: \*Placement Exam or CEEB scores determined by the Department of Languages

**SPAN 201-202**

**Business Spanish I and II**

**Six Credits**

The course aims to develop communication skills directed at business correspondence. Emphasis is on the contribution of logic, psychology, ethics, and grammar to communications.

Requisites: SPAN 152

**SPAN 213**

**Literary Genres I**

**Three Credits**

The course deals with the literary genres: poetry, drama, the short story, the novel, and the essay. Emphasis is on the origins and development of each genre, as well as on the analysis of different literary works.

Requisites: SPAN 152

**SPAN 214**

**Introduction to Literary Genres II**

**Three Credits**

This is a continuation course of SPAN 213 which continues to study different literary genres.

Requisites: SPAN 152-213

**SPAN 215**

**Advanced Composition**

**Three Credits**

The course emphasizes the development of the skills needed to write logically and correctly. Research techniques will also be covered.

Requisites: SPAN 152

**SPAN 221-222**

**Spanish Literature I and II**

**Six Credits**

The course is an introduction to the history of Spanish literature. It includes an overview from the Middle Ages to the Renaissance. The course aims to familiarize the student with cultural movements and representative works of each period.

Requisite: SPAN 213

**SPAN 230**

**Introduction to Linguistics**

**Three Credits**

This is a theory and practice course of the introduction to linguistic terminology and methods. Topics include phonology, morphosyntax, and semantics.

Requisites: SPAN 265

**SPAN 250 @**

**Writing Techniques**

**Three Credits**

This course will provide the necessary tools for developing skills in writing letters, paragraphs, and essays.

Requisites: SPAN 152

**SPAN 255 @**

**Research and Writing**

**Three Credits**

This course is designed to develop research and writing skills in an acceptable academic format. Attention will be given to APA and MLA formats, the writing process, and the use of reference materials to sustain writing ideas.

Requisites: SPAN 152-250

**SPAN 265**

**Advanced Grammar**

**Three Credits**

This course is an in depth study of the morphological and syntactical aspects of the Spanish language.

Requisites: SPAN 152

**SPAN 323**

**Spanish Literature**

**Three Credits**

The course covers Spanish literature from the Golden Century to the present.

Requisites: SPAN 213

**SPAN 331**

**Oratory and Speech Communication**

**Three Credits**

The course studies basic elements of oral communication and informative and persuasive speeches.

Requisites: SPAN 250

**SPAN 453**

**Puerto Rican Literature**

**Three Credits**

The course covers Puerto Rican literature from its origins to the present. It includes an analysis of representative works of the different literary movements.

Requisite: SPAN 213

**SPAN 463**

**Spanish-American Literature**

**Three Credits**

The course covers Latin American literature and literary movements from the colonial period to the present.

Requisites: SPAN 213

\*Students will be placed into appropriate levels by CEEB scores or by department placement exams.

Note: Literature courses need not be taken in numerical order, but the student's understanding of the chronology will be aided by following the numerical sequence.

# SCHOOL OF BUSINESS AND ENTREPRENEURSHIP

UT's School of Business and Entrepreneurship is considered one of the largest and fastest growing in Puerto Rico with an enrollment of almost 4,000 students. Its academic offer ranges from certificates to doctoral studies. Programs that have been designed taking into consideration the needs and requirements of the industrial, entrepreneurial, professional and public sectors in the Island. The general areas of specialization in its academic programs are: Entrepreneurship, Management, Marketing, Accounting, Information Management and International Business. Other academic tracks such as quality, taxation, human resources and materials are offered under the main areas of specialization.

The School has a visiting faculty in the Management and Management Information System programs proceeding from countries such as: Spain, Mexico, India and the United States. Its regular faculty is integrated by 46 highly competitive members, 30 of which have doctoral degrees, 13 are in the process of completing one and 3 have a Master's degree.

In the interest and objective of providing the student with a global business vision, the School of Business and Entrepreneurship maintains relationships and collaborative agreements with prestigious universities around the world.

### PARTICIPATING INTERNATIONAL ORGANIZATIONS

Consejo Latinoamericano de Administración de Empresas, CLADEA  
AACBS International Academy of International Business  
Fundación para la Educación Internacional, FESI  
Red Latinoamericana Emprendedora  
World Economic Forum (WEF)

### COLLABORATIVE RELATIONS WITH OTHER INTERNATIONAL BUSINESS SCHOOLS

Universidad Veracruzana  
Instituto Politécnico Nacional de Méjico  
Universidad de las Américas, en Puebla  
George Washington University  
Instituto Tecnológico de Monterrey  
Universidad Autónoma de Madrid  
Universidad Politécnica de Madrid  
Universidad de San Pablo  
Groupe ESC Toulouse  
Oslo School of Management in Norway  
Argosy University  
Florida International University

Other institutions in process in: Spain, Peru, Brazil, Chile, United States and Costa Rica.

### SPECIALIZED ACCREDITATIONS



In April of 2011, the School of Business and Entrepreneurship has earned the specialized accreditation by the "Association to Advance Collegiate Schools of Business" (AACSB, International). The School position itself as the only institution to have that accreditation in Puerto Rico and the Caribbean. AACSB accreditation is the hallmark of excellence in business education, and has been earned by less than 5% of the world's business schools.

### MISSION

"The Mission of the School of Business and Entrepreneurship at the Universidad del Turabo is to develop professionals, leaders and academics with a superior theoretical knowledge and practical skills for the creation and development of new enterprises and effective management of existing business. Our students acquire the skills, values and sense of social responsibility into its business practices through education that is entrepreneurial in spirit, ethical in their approach and global in orientation. Excellence in teaching is enhanced by a faculty committed with professional development, intellectual contributions and service. As a professional school of business, we want to impact positively the society, organizations and the communities in which our students and alumni are a part. "

### VISION

The vision of the school is to be the leading School in business education and research in Puerto Rico and the Caribbean and the preferred partner for successful alliances for the government, private sector and non-profit organizations, both national and international.

### STAFF

**Marcelino Rivera-López** / Dean

**Brunilda Aponte** / Associate Dean

**Virgin Dones-Gonzalez** / Associate Dean

## STUDENT ORGANIZATIONS

Association of Office Administration Students  
 Association of Accounting Students  
 Association of Administration & Materials Control Students  
 Association of Information Systems Students  
 Association of Management Students  
 Association of Trade Students  
 Student Chapter of the Chamber of Commerce

The different student associations in the School of Business and Entrepreneurship are created in order to foster unity and communication among the students, professors and professionals in the Business Administration area. Students have the opportunity to express their ideas and to participate in activities promoting their professional development. This gives students the opportunity to demonstrate qualities and characteristics which contribute to the success of all good employees and citizens. Students participate in activities both within and outside the Institution. Thus, students are offered opportunities to visit companies, to attend conventions and to participate in university competitions related to their profession.

## CENTER OF TRAINING AND ENTERPRISE DEVELOPMENT CADE

The Center for Training and Enterprise Development (CADE) is a business unit of the School of Business Administration. Its main goal is to collaborate with industries and with the community in the process of developing and strengthening the managerial and technological skills of professionals. With technology as a main concern, the faculty is at present designing the academic programs required. CADE has up-to-date computer laboratories which respond to the technological demands of the marketplace, thus permitting trainees to have hands-on experience with the latest technology while learning.

### MISSION

To foster the creation and dissemination of innovations in administrative sciences using a technological approach for the benefit of the students, faculty, the entrepreneurial community and Puerto Rican society in general.

We promote the idea that a company that is technologically enabled is a company with greater possibilities of success in the global market.

Our courses teach basic skills which will permit the student to assimilate technological advances quickly.

The program emphasizes topics that will increase students' productivity and give them a competitive advantage, among which are:

### Computer Area

- Basic course in handling computers
- Windows
- Internet: basic and advanced
- Microsoft Office: basic and advanced
- Microsoft Publisher: basic and advanced
- Desktop Publishing/WordPerfect: basic and advanced
- Desktop Publishing/Word: basic and advanced
- Visual Basic: basic and advanced
- Peachtree (Computerized Accounting)
- Web page design
- Workshop on handling a portable computer

### Management Area

- Strategic planning
- Strategic management
- Quality and Total Quality
- Leadership
- Organizational change
- Organizational behavior and development
- Organizational culture
- Effective communication
- Handling of change
- Creativity in the development of work
- Technology Management
- The organization of the future
- Management processes
- Teamwork
- Empowerment
- Self-esteem
- Motivation
- Human relations
- Effective presentations
- Benchmarks
- Measurement of Processes
- Development of teamwork
- Effective meetings
- Interpersonal relations
- Conflict resolution
- Labor legislation
- OSHA regulations
- Supervision of quality
- Associated or Clients
- One-Minute Manager
- English conversation: basic and intermediate
- Public relations
- Business accounting
- Publicity and promotions
- Techniques to establish your own business
- Preparation of federal proposals

Other Offers

- Professional Certifications:  
Enterprise Competitiveness (one year)  
Real Estate  
Entrepreneurial

Courses for certification as Project Management Professional (PMP)

(9 credits - graduate level)

- Project Management Methodology
- Principles of Quality and Risk
- Principles of Human Resources, Hiring and Communication

Courses for professional certification in Oracle (For active, withdrawn or special students of the University of Turabo)

- Introduction to design and handling of databases
- Administration of databases
- Optimization, Systems of Support and Recovery for databases

Courses for professional certification in MOUS (Microsoft Office User Specialist)

- Word
- Excel
- Power Point

Online Training (through Internet)

On a flexible schedule and from any location, students interact with instructors and classmates using the Internet.

- OSHA Regulations
- Labor legislation
- Sexual harassment
- Inventory
- Techniques of Supervision
- Financial analysis
- Statistical Control of Processes
- Time Management
- Handling of changes
- Purchasing
- Health and Lifestyles

Future Training

- Insurance

**ASSOCIATE DEGREE IN BUSINESS ADMINISTRATION:  
ACCOUNTING**

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>24</b>
<b>Core Courses</b>	<b>24</b>
<b>Major Courses</b>	<b>12</b>

**General Education Courses (24 credits)**

ENGL 152	Intermediate Communicative English	3
ENGL 153	Advanced Communicative English	3
ENGL 231	Research and Writing	3
MATH 199	Quantitative Methods	3
SPAN 152	Introduction to Writing	3
SPAN 250	Writing Techniques	3
SPAN 255	Reading, Writing and Analysis	3
FSBE 100	Freshman Seminar	3

**Core Courses (24 credits)**

ACCO 111	Introduction to Accounting I	3
ACCO 112	Introduction to Accounting II	3
COIS 201	Data Processing	3
MANA 210	Management Theory	3
MANA 230	Organizational Behavior	3
MARK 133	Principles of Marketing	3
STAT 201	Business Statistics I	3
ENTR 360	Entrepreneurship	3

**Major Courses (12 credits)**

ACCO 301	Intermediate Accounting I	3
ACCO 302	Intermediate Accounting II	3
ACCO 303	Cost Accounting	3
ACCO 304	Auditing	3
ACCO 305	Income Tax for Puerto Rico I	3
ACCO 306	Accounting Information Systems	3
ACCO 350	Computerized Accounting System	3
ACCO 405	Puerto Rico Taxes II	3

Notes:

- The ENGL 151 may require a previous course, according to the score obtained in the placement test or the CEEB English test.
- The SPAN 151 may require a previous course, according to the score obtained in the placement test or the CEEB Spanish test.
- COIS courses require to be enrolled in a lab section.
- The minimum grade point average (GPA) for graduation is 2.30 in major courses and 2.00 in other courses.
- Curriculum changes apply to new students, reinstates and transfers.
- MATH 199 has a Requisite (MATH 121) or to approve the placement test.

**ASSOCIATE DEGREE IN BUSINESS ADMINISTRATION:  
COMPUTERIZED INFORMATION SYSTEMS**

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>24</b>
<b>Core Courses</b>	<b>21</b>
<b>Major Courses</b>	<b>15</b>

**General Education Courses (24 credits)**

ENGL 152	Intermediate Communicative English	3
ENGL 153	Advanced Communicative English	3
ENGL 231	Research and Writing	3
MATH 199	Math for Administrative Studies	3
SPAN 152	Introduction to Writing	3
SPAN 250	Writing Techniques	3
SPAN 255	Reading, Writing and Analysis	3
FSBE 100	Freshman Seminar	3

**Core Courses (21 credits)**

ACCO 111	Introduction to Accounting I	3
ACCO 112	Introduction to Accounting II	3
COIS 101	Introduction to ComputerBased Systems	3
MANA 210	Management Theory	3
MANA 230	Organizational Behavior	3
STAT 201	Business Statistics I	3
ENTR 360	Entrepreneurship	3

**Major Courses (15 credits)**

COIS 102	Programming Principles	3
COIS 240	Object Oriented Programming C++	3
COIS 250	Systems Analysis and Design	3
COIS 290	Systems Development Workshop	3
COIS 350	Structured Design with Object Programming	3

**ASSOCIATE DEGREE IN BUSINESS ADMINISTRATION:  
MANAGEMENT**

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>24</b>
<b>Core Courses</b>	<b>24</b>
<b>Major Courses</b>	<b>12</b>

**General Studies (24 credits)**

ENGL 152	Intermediate Communicative English	3
ENGL 153	Advanced Communicative English	3
ENGL 231	Research and Writing	3
MATH 199	Quantitative Methods	3
SPAN 152	Introduction to Writing	3
SPAN 250	Writing Techniques	3
SPAN 255	Reading, Writing and Analysis	3
FSBE 100	Freshman Seminar	3

**Core Courses (24 credits)**

ACCO 111	Introduction to Accounting I	3
ACCO 112	Introduction to Accounting II	3
COIS 201	Data Processing Principles	3

MANA 210	Management Theory	3
MARK 133	Principles of Marketing	3
MANA 230	Organizational Behavior	3
STAT 201	Business Statistics I	3
ENTR 360	Entrepreneurship	3

**Major Courses (12 credits)**

MANA 213	Personnel Administration	3
MANA 302	Labor Legislation	3
MANA 316	Small Business Administration	3
MANA 321	Supervision and Leadership	3
MANA 340	Operations Management	3

Notes:

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2. The SPAN 151 may require a previous course, according to the score obtained in the placement test or the CEEB Spanish test.
3. COIS courses require to be enrolled in a lab section.
4. The minimum grade point average (GPA) for graduation is 2.30 in major courses and 2.00 in other courses.
5. Curriculum changes apply to new students, reinstates and transfers.
6. MATH 199 has a Requisite (MATH 121) or to approve the placement test.

**ASSOCIATE DEGREE IN EMERGENCY MANAGEMENT  
AND DISASTERS RECOVERY**

The Associate Degree in Emergency Management and Disaster Recovery consists of 48 credits and has specialized tracks in technical areas of responses with management approach. The program combines courses in management and emergency management with a strong theoretical component. The program covers skills and knowledge required by employers and regulatory agencies.

It also includes preparation courses in FEMA (Federal Emergency Management Agency) Certification in Introduction to Incident Command System (ICS), Introduction to National Incident Management System (NIMS), An Introduction to the National Response Framework (NRF) and other special classes that allow professionals to keep updated in the discipline.

One of the advantages offered by this associate degree is that its contents covers all areas of Federal certification required by FEMA (Federal Emergency Management Agency), DHS (Department of Homeland Security) and the Executive Orders issued by the governor of Puerto Rico.

<b>Total Credits</b>	<b>54</b>
<b>General Education Courses</b>	<b>24</b>
<b>Core Courses</b>	<b>18</b>
<b>Major Courses</b>	<b>12</b>

**General Studies (24 credits)**

ENGL 152	Intermediate Communicative English	3
ENGL 231	Research and Writing	3
SPAN 152	Introduction to Writing	3
SPAN 250	Writing Techniques	3
COIS 201	Data Processing	3
STAT 201	Business Statistics I	3
FSB 100	Freshman Seminar	3
SIGN 102	Sign Language I: Fundamentals	3

**Professional Education Courses (18 credits)**

EMDR 101	Introduction to Emergency Management Mitigation and Preparedness	3
EMDR 102	Introduction to Incident command System	3
EMDR 201	Emergency Management Planning	3
EMDR 203	Occupational Safety and Health	3
EMDR 206	Introduction Emergency Management Response and Disasters Recovery	3
MANA 340	Principles of Production and Operations Management	3

**Major Courses Required (12 credits)**

EMDR 240	Emergency Preparedness, response and Planning for Hazardous Materials	3
EMDR 245	Weapons of Mass Destruction (WMD)	3
EMDR 250	Disaster Management Plan Development	3
EMDR 260	Internship of Emergency Management I	3

**ASSOCIATE DEGREE IN BUSINESS ADMINISTRATION: PHARMACEUTICAL MANUFACTURING**

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>15</b>
<b>Required Courses</b>	<b>9</b>
<b>Major Courses</b>	<b>36</b>

**General Studies (15 credits)**

ENGL 152	Intermediate Communicative English	3
ENGL 153	Advanced Listening and Speaking	3
MATH 102	Applied Basic Mathematics	3
SPAN 151	Introduction to Writing	3
SPAN 250	Writing Techniques	3

**Required Courses (9 credits)**

COIS 201	Data Processing	3
MANA 230	Organizational Behavior	3
MANA 260	Entrepreneurial Strategies	3

**Major Courses (36 credits)**

PHMA 110	Business Perspectives in the Pharmaceutical Industry	3
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PHMA 120	Safety, Industrial Hygiene and Ergonomics	3
PHMA 131	Introduction to Materials Management	3
PHMA 140	Mathematics for Pharmaceutical Operations	3
PHMA 201	Fundamentals of Pharmaceutical Technology I	3
PHMA 202	Fundamentals of Pharmaceutical Technology II	3
PHMA 205	Standard Operating Procedures	3
PHMA 215	Compliance in the Manufacturing Pharmaceutical Industry	3
PHMA 225	Industrial Maintenance	3
PHMA 230	Documentation and Manufacture Instructions	3
PHMA 240	Productivity in the Pharmaceutical Manufacture Processes	3
PHMA 290	Industrial Practice Internship	3

**ASSOCIATE DEGREE IN HOTEL ADMINISTRATION AND TOURISM**

The Associate Degree in Hotel Management is proposed to prepare the student with advanced knowledge, strategies and skills to perform efficiently and successfully as a manager in a globalized industry. The skills to be developed and strengthen are: effective communication and writing (both Spanish and English language), integrating the latest and most effective techniques in the area, in addition to the basic skills like mathematics, computer and management, dominion of the most innovative marketing strategies, sales, and leadership applied to the Hotel Industry and Tourism. The degree will encourage the continuous development of the critical thinking and the interpretation of the organizational environment, including trans-cultural approach that allows the future graduates overcome cultural differences and capitalize on them to generate greater customer service and economic benefits for the organization. The student will develop the skills needed to serve in the performance of administrative services in the hotel industry with special emphasis on: customer service, cross-cultural management, reception, reservations, rooms maintenance and food and beverage management in hospitality. It is expected that students develop the necessary skills giving special attention to the English language and the use and management of the computer.

<b>Total Credits</b>	<b>48</b>
<b>General Education Courses</b>	<b>12</b>
<b>Professional Education Courses</b>	<b>15</b>
<b>Major Courses</b>	<b>21</b>

**General Studies (12 credits)**

ENGL 151	Basic Communicative English: Listening	3
HIST 253	History of Puerto Rico (Compendium)	3
MATH 121	Intermediate Algebra	3

SPAN 151 Introduction to Language 3

**Professional Education Courses (15 credits)**

ACCO 110 Hospitality Accounting 3  
 COIS 201 Data Processing Principles 3  
 GEOG 110 World Tourism Geography 3  
 MANA 213 Personnel Administration 3  
 MARK 130 Hospitality and Tourism Marketing 3

**Major Courses (21 credits)**

HOTU 200 Total Quality Customer Service:  
 Tourism Approach 3  
 HOTU 201 Hospitality Industry Management 3  
 HOTU 202 Cross-cultural Management for Tourism 3  
 HOTU 203 Principles of Tourism 3  
 HOTU 204 Reception and Reservations Management 3  
 HOTU 205 Room and Maintenance Service  
 Management 3  
 HOTU 206 Food and Beverage Management 3

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2. The SPAN 151 may require a previous course, according to the score obtained in the placement test or the CEEB Spanish test.
3. COIS courses require to be enrolled in a lab section.
4. The minimum grade point average (GPA) for graduation is 2.30 in major courses and 2.00 in the general GPA.
5. Curriculum changes apply to new students, reinstates and transfers.
6. MATH 199 has a Requisite (MATH 121) or to approve the placement test.

**COURSE DESCRIPTIONS**

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

**ACCO 101  
 Business Mathematics  
 Three Credits**

Basic mathematics skills prepare students for accounting and finance courses. This course reviews percentages, simple interest, compound interest, discounts, commissions and proportions.

**ACCO 111  
 Introduction to Accounting I  
 Three Credits**

This course introduces the basic principles of accounting theory and practice, emphasizing the sole-proprietorship form of business. Primary areas of study include nature of a business, the accounting equation, the theory of debit and credit, preparation of financial statements, adjusting process, the accounting cycle, special journals, accounting

for merchandise business, inventory, internal control for cash procedures, and receivables.

**ACCO 112  
 Introduction to Accounting II  
 Three Credits**

Study the accounting for fixed assets and intangible assets; current liabilities, with an emphasis in payroll accounting system. The course discusses how partnership and corporations are structured and formed. Describe the cash flow activities reported in the statement of cash flows.

Requisite: ACCO 111

**ACCO 295  
 Managerial Accounting  
 Three Credits**

Use and interpretation of financial statements by management in planning and controlling a business. This course provides a sound background for accounting-related decision making. Topics studied include cash budgets, financial reporting, and capital budgeting. It also emphasizes the study and analysis of managerial accounting problems.

Requisite: ACCO 112

**ACCO 301  
 Intermediate Accounting I  
 Three Credits**

Study of the general accepted accounting principles according to the presentation of accounting information in the financial statement and related notes. Include journal entries, working papers, adjustments, financial statement, assets and liabilities valuation. It also includes procedures and principles follow in the presentation of the Owner's Equity and income determination.

Requisites: ACCO 112

**ACCO 302  
 Intermediate Accounting II  
 Three Credits**

Study of the general accepted accounting principles according to the presentation of accounting information in the financial statement and related notes. Include journal entries, working papers, adjustments, financial statement, assets and liabilities valuation. It also includes procedures and principles follow in the presentation of the Owner's Equity and income determination.

Requisites: ACCO 301

**ACCO 303**

**Cost Accounting**

**Three Credits**

A study of the principles of accounting related to costs and its functions. It includes cost and non-cost systems and methods of determining the basis to cost. Cost classification, preparation of cost reports and fixed standard costs.

Requisites: ACCO 112

**ACCO 304**

**Auditing**

**Three Credits**

A review of accounting theory, auditing procedures, worksheets, internal control and fraud, preparation of financial statements, reports, forms, method and procedures. Attention is given to the nature and purpose of auditing, auditing standards, professional conduct, auditor legal liability and the approach followed in performing audits of financial statements. Special attention is devoted to auditor's decision processes in internal control, auditing sampling, and accumulative audit evidence.

Requisites: ACCO 302

**ACCO 305**

**Income Tax for Puerto Rico I**

**Three Credits**

Study of income tax, its history and its purposes. The tax laws of Puerto Rico, inclusions and exclusions, allowable deductions, practice in filing individual, corporate and partnership returns.

Requisite: ACCO 112

**ACCO 306**

**Accounting Information Systems**

**Three Credits**

A study of the concepts, methods and tools used in the design of accounting information systems, and the function of budgeting in the management and control of business activities. Requires laboratory.

Requisite: ACCO 112

**ACCO 350**

**Computerized Accounting Systems**

**Three Credits**

The use of computers and microcomputers to record accounting data. Use of available software in recording transactions in registers and journals and posting to general and subsidiary ledgers. Computer preparations of trial balance, financial statements and payroll. Emphasis on accounting principles in the development of data entry skills. Requires laboratory.

Requisite: ACCO 112, COIS 201

**ACCO 405**

**Income Tax for Puerto Rico II**

**Three Credits**

This course emphasizes the study and analysis of Puerto Rico's income tax law related to corporations, partnerships and special partnerships. It also includes other tax responsibilities: patents, property taxes, excise taxes and federal taxes applicable to employers in Puerto Rico.

Requisite: ACCO 305

**COIS 101**

**Introduction to Computer-Based Systems**

**Three Credits**

Introduction to computers and electronic data processing. Includes historical development, data organization, storage systems and types of peripheral devices. Data input and output. Also includes an introduction to microcomputer use and applications, word-processing and spreadsheets. Requires laboratory.

**COIS 102**

**Programming Principles**

**Three Credits**

Practical and theoretical introduction to basic programming principles. Includes development of logic, as well as the use of flow charts, structured flow charts and pseudo codes. Students will become familiar with editing and compiling programs.

Requisites: COIS 101

**COIS 106**

**Business Programming in BASIC**

**Four Credits**

Programming principles emphasizing practical applications in business using BASIC. Structured programming techniques will be developed along with appropriate documentation for the programs, including flowcharts, hierarchy charts, documentation sheets for the program and its modules. Requires laboratory.

Requisite: COIS 102

**COIS 107**

**Programming in COBOL**

**Four Credits**

Introduction to computer programming in a business environment, emphasizing structural design of programs, development, testing implementation and documentation of common business applications in COBOL. Requires laboratory.

Requisite: COIS 102

### **COIS 201**

#### **Data Processing Principles**

##### **Three Credits**

This introductory course acquaints the student with the organization, functions, capabilities, limitations and applications of modern computer systems in the field of business administration. Analysis and design methods and techniques for information systems and data processing are explained. Includes hands-on experience using word processing and spreadsheet applications on microcomputers. Requires laboratory.

### **COIS 250**

#### **Systems Analysis and Design**

##### **Three Credits**

Study of the systems development cycle, with emphasis on the present system documentation, using the classic tools and techniques as well as the structured ones. It includes the use of these resources for describing processes, data flow, data structures, forms design for data gathering and reports. It also discusses data gathering activities and information, progress reports, and the transition from analysis to design.

Requisite: COIS 102

### **COIS 290**

#### **Systems Development Workshop**

##### **Three Credits**

A practice course in which the student is required to develop a project with a real application. Includes analyzing, designing programming and implementing a simple computerized system. Requires laboratory.

Requisite: COIS 250

### **EMDR 101**

#### **Introduction to Emergency Management Mitigation & Preparedness**

##### **Three Credits**

Accidents and emergency situations have plagued man since the beginning of history and will undoubtedly occur during our conceivable future. Armed with knowledge and skills for managing such occurrences can lessen their impacts on society. This course presents the theories, principles, and approaches to emergency management. The philosophy of Comprehensive Emergency Management will be discussed with the four attendant steps of current FEMA's strategic model. Legal issues involving emergency management will be presented.

### **EMDR 102**

#### **Introduction to Incident Command System**

##### **Three Credits**

This course introduces the Incident Command System (ICS), and provides the foundation for higher level ICS training. The course content describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS). ICS orientation is intended for personnel assigned to an incident or event who have a minimum requirement for understanding ICS. This course will review the ICS organization, the basic terminology, and common responsibilities. It will provide enough information about the ICS to enable the student to work in a support role at an incident or event, or to support an incident from an off-site location.

### **EMDR 201**

#### **Emergency Management Planning**

##### **Three Credits**

This course introduces the basic policies, concepts, and procedures of planning and addresses the various federal and state assistance programs. Emphasis is placed on the coordination of damage assessment, preparing documentation, and recovery procedures. Students will be introduced to the emergency management planning process, planning standards, planning techniques, and the steps in the development of a basic emergency management plan, special events contingency planning, debris management plan, and its functional annexes. This course is designed for emergency management personnel who are involved in developing an effective emergency planning system.

### **EMDR 203**

#### **Occupational Safety and Health**

##### **Three Credits**

This course offers the student with the rationale of providing an occupationally safe and healthy work environment for employees. These skills are needed to be able to work effectively in the area of human resources and employee development as well as industrial relations since law has provided workers with specific safety and health rights.

### **EMDR 206**

#### **Introduction Emergency Management Response and Disasters Recovery**

This course provides an overview of hazards theory, emergency management fundamentals and the science of natural and manmade hazards. Both natural and technological hazards are studied with the perspective of response and recovery focus. Some of the topics include response and recovery to earthquakes, tsunamis,

volcanoes, floods, wildfires, terrorism, and hurricanes. An analysis of past disasters will be presented along with their impacts on policy formation leading up to the current FEMA all-hazards approach. The role, duties, and importance of the Emergency Manager will be discussed throughout the semester.

#### **EMDR 240**

##### **Emergency Preparedness, Response and Planning for Hazardous Materials**

##### **Three Credits**

This course utilizes a modular format where an emergency management department may analyze its current level of competency and choose course modules that will provide the skills needed by its hazardous materials team. Training includes offensive procedures for mitigation of hazardous materials spills, leaks, and exposures. Topics include chemistry, detection devices, advanced recognition and identification, pre-incident planning, incident management, scene evaluation and termination, terrorism, toxicology, medical surveillance, emergency care, PPE usage and limitations, and decontamination.

Requisite: EMDR 203

#### **EMDR 245**

##### **Weapons of Mass Destruction (WMD)**

##### **Three Credits**

This course provides an introduction to the issue of weapons development proliferation, a non-proliferation around the world. We will examine the basic technologies and motivations, and impact of the development of nuclear, chemical, and biological weapons and ballistic missiles on the international security. Will discuss the various international strategies to counter weapons proliferation - treaties, multilateral conventions and informal arrangements. Examine the challenges of weapons proliferation - such as domestic safety, regional stability and security, and transnational terrorism. This will be done through national and regional case studies - where we will discuss actual and potential US and international strategies/response to each case.

Requisites: EMDR 203, EMDR 206

#### **EMDR 250**

##### **Disaster Management Plan Development**

##### **Three Credits**

This course will provide a broad introduction to the critical challenges of disaster management and policy. The central purpose of this course is to examine strategies for reducing the hazards posed by disasters. It will focus on what can be learned from the history of disasters, and on how we can apply those lessons to manage future disasters. This course is designed to student from a research or policy

perspective and for those who may be charged with responsibility for on-the-scene intervention. It will conclude by examining organizational and individual behavior in high-stress situations. Throughout the semester, particular attention will be paid to how disaster management efforts can increase the vulnerability of some populations or can promote widespread resilience.

Requisites: EMDR 101

#### **EMDR 260**

##### **Internship of Emergency Management I**

##### **Three Credits**

This course integrates the knowledge acquisition in the Associate Degree courses. It applies the management concepts, principles and practices conducting a project within the students' specialization area. Methodology on project management, schedule of activities and task control, formal presentations and group dynamics to deal with management problems is emphasized. It includes an emergency management situation in the context of problem diagnostic and analysis, development of alternative solutions, tools development, implementation of alternatives/tools, and the evaluation of implementation. Requires 60 hours on a practice internship.

Requisites: EMDR 250

#### **HOTU 200**

##### **Customer Service: Tourism Approach**

##### **Three Credits**

This course gives the student the theoretical and practical tools needed to apply the Total Quality Customer Service to the Tourism and Hospitality Industry. The course starts with the main concepts to understand the role of the services in the Tourism, the Hospitality and the leisure services (THSO), and then relates among the quality service, the customer satisfaction and the customer value.

The course details the importance of the Quality Service applied to the THSO to generate Competitive Advantage through the Organization, improving the internal and external relationships and minimizing the services failures. Finally, it analyzes the cross-cultural issues related with the service quality and the accurate quality services monitoring and measuring applied to the THSO.

#### **HOTU 201**

##### **Hospitality Management**

##### **Three Credits**

This course gives the students the industry know-how and the management skills needed to thrive in all aspects of the field, from food service to lodging to tourism. The course offers the most comprehensive and engaging introduction to this exciting field possible. Also students could learn

everything from careers to operations to finance. Students should appreciate the organization of the chapters which will help them to understand the relationships between the various topics described before. Finally, students will have gained a strong overview of the industry, where it fits into the broader world, the major career paths, as well as the important issues and challenges that managers face.

### **HOTU 202**

#### **Cross-Cultural Management for Tourism**

##### **Three Credits**

This course describes the main cultural differences inside the tourism and hospitality areas. So this course will explain the meaning of culture and the way to solve conflicts and misunderstandings among the different cultures. It will analyze the cultures elements, and the student's understand how to perform and communicate effectively with clients of very different cultural backgrounds. The student will learn how the cross cultural elements can affect the way an individual behaves, and the social elements of the culture, like Trompenaars and Hofstede and with the most relevant knowledge until present time referring to the tourism and hospitality areas.

### **HOTU 203**

#### **Principles of Tourism**

##### **Three Credits**

This course will be able to know in a general way the different areas of the tourism in the context of the global business. The student will be able to have tourism's integral vision (their principles, practice and philosophies), so that way the student will develop and advise functional tourism circuits. This course offer tourism's theory and practice, with an unparalleled discussion of recreational travel today. This course gives the students the most relevant planning, social policy and marketing issues of the tourism activity. Finally, it discusses the future that the tourism is taking at a global level.

### **HOTU 204**

#### **Front Desk Management**

##### **Three Credits**

This course has been designed to prepare the future hotel receptionist and manager in the integration of the diverse technologies in all the aspects of the proper functioning of the reception and the process of reservation in a modern hotel. Including also the competitions to execute the first impressions of the customer, evaluating the specific needs of him, with the intention of enhancing the service giving.

### **HOTU 205**

#### **Room and Maintenance Management**

##### **Three Credits**

The course includes the knowledge and development of management techniques to use in the maintenance areas of

the hotel structure, through a realistic and exhaustive study of the areas of Management, Security and Maintenance. The course will contribute for the training of the students in the search for suitable alternatives to raise the quality of their services. Through a preventive maintenance and security in the hotel structure.

### **HOTU 206**

#### **Food and Beverage Management**

##### **Three Credits**

The students will learn of the characteristic of the production, to stock up and the preservation of different types of beverages and foods, the service processes, and advising the customers. They will learn rules and hygienic measurements, and healthiness with special attention to the legal responsibility. The students through the internalization of these contents will be able to manage the production process of the beverages and food for the adaptation to the customer needs.

### **MANA 131**

#### **Human Relations in Business**

##### **Three Credits**

Studies personal and interpersonal relationship in the decision-making process. Analyzes the dynamics of leadership and group behavior through discussion of different cases, examines labor-management relations in production, communication and sales.

### **MANA 204**

#### **Business Law**

##### **Four Credits**

A study of the legal aspects of common business transactions with emphasis on Puerto Rican legislation. Special attention is given to contracts, sales, marketable securities, transfer of property, deeds and mortgages.

### **MANA 210**

#### **Management Theory**

##### **Three Credits**

A study of traditional principles of business administration compared to new concepts. Analyzes the management process through discussions of the four basic principles of business administration: planning, organization, administration and control.

### **MANA 213**

#### **Personnel Administration**

##### **Three Credits**

A study of the theory and application of fundamental principles of human resources management in an enterprise. The dynamic role of the manager and his relationship to personnel. The course also looks at issues in human resources management and their relation to the general objectives of the enterprise.

Requisite: MANA 210

**MANA 230**  
**Organizational Behavior**  
**Three Credits**

Study of classical and contemporary organization theories; interpersonal and organizational behavior; motivation, communications, and leadership theories; and decision processes in organizations.

**MANA 300**  
**Ethics in Business**  
**Three credits**

Ethical principles involved in the decision-making process in a business environment. The student will be learning concepts related to moral aspects of human behavior within the whole social system, and particularly in business settings or in groups where the individual operates.

**MANA 306**  
**Government and Business**  
**Three Credits**

A study of the role of government in the free enterprise system and legislation created to control or regulate commerce.

Requisite: MANA 204

**MANA 308**  
**Real Estate Management**  
**Three Credits**

Fundamentals of real estate and the essentials of brokerage, financing, mortgages, investments, property administration and appraisals.

Requisites: MANA 210, FINA 202

**MANA 316**  
**Small Business Management**  
**Three Credits**

Planning, distribution of space and handling of materials, analysis of investments, inventory control, quality control and the analysis of methods to determine employee efficiency, as these apply to small businesses.

Requisites: MANA 210, STAT 201, MANA 340

**MANA 321**  
**Supervision and Leadership**  
**Three Credits**

This course provides a general view of the concepts, methods and modern supervisory techniques needed to become efficient business managers. Emphasis is on the supervisor's responsibility and authority; the course highlights the role and functions of the supervisor. Theory

is combined with practical observations, so that the student can become aware of all the fiscal, human and psychological resources that the supervisor must use in order to administer efficiently and effectively.

Requisite: MANA 210

**MANA 340**  
**Production and Operations Management**  
**Three Credits**

Analysis, planning and control of production facilities and operations. Includes the use of techniques and models for decisions related to: demand forecasts, product mix, plant location, quality control, inventory control, and the human factor in the production process.

Requisites: STAT 201

**MANA 401**  
**Business Policies**  
**Three Credits**

Helps integrate knowledge acquired in the first three years of business administration. Includes a study of business in all its stages, as well as its social and environmental impact.

Requisite: MANA 340

**MANA 404 @**  
**Labor Relations**  
**Three credits**

A multinational approach to labor relations, giving special attention to Puerto Rico. Analysis of the origins of labor unions in Puerto Rico. Labor laws in Puerto Rico and federal laws related to the island. A study of arbitration and complaint procedures and the selective analysis of current situations in labor.

Requisite: MANA 213

**MARK 133**  
**Principles of Marketing**  
**Three Credits**

The processes involved in the distribution of goods and services from producer to consumer. Studies the comprehensive system of marketing, including management-controlled variables: product, price, promotion and distribution; and external variables such as government, the economy and society. Also studies consumer behavior, modern marketing trends, market definition, and placement and information systems, among other topics.

### VISION

In collaboration with the broader Universidad del Turabo community and the professional community in school districts, the School of Education seeks to prepare professionals who are able to meet the challenges of education in a global society that is changing, diverse, and technologically oriented.

The School of Education will provide a high quality, student-centered and innovative environment to prepare reflective, collaborative and highly effective educational leaders who can address the needs of students and communities in Puerto Rico and abroad.

The Undergraduate Education Program, conscious of its responsibility in improving the quality of education, provides teacher candidates with a solid preparation in the field of education, as well as with the academic background needed to enhance their general professional competence and their teaching skills.

### MISSION

The School of Education is committed to developing reflective, collaborative and highly effective educational leaders. We view teaching both as an art and as a science, learning as a reciprocal process, and service as a responsibility. Thus, we provide a learning environment that promotes individual creativity and fosters the synthesis of theory and practice. We facilitate the development of leaders who are sensitive to individual differences, to moral and equity issues and who, in their work as educators, will actively shape educational organizations.

The School of Education offers Bachelor's Degree programs in Elementary Education, Secondary Education, Special Education and Physical Education. The School of Education serves a diverse student body at the undergraduate and graduate levels on campus, off campus, and at several sites in the United States. We regard the diversity of our many units as a strong point which adds value to our identity.

The School of Education has a tradition of providing an educational environment that is conducive to interaction, innovation, reflection and service. The essence of our School is its people. From faculty and staff, students and alumni to community partners in private and public schools, the intense commitment and great sense of pride and responsibility in our role as educators is indicative of the core values sustained by the School of Education.

### In carrying out our mission, we value:

- Excellence and innovation in teaching and learning
- Integration of pedagogical theory and practice
- Professional and personal integrity and responsibility
- Creativity and the development of significant projects that serve as examples in our field
- Active construction and application of knowledge
- A culture that stresses intellectual stimulation, academic excellence and personal dignity
- Teamwork and collaboration with schools, districts, institutions of higher education and organizations in Puerto Rico and abroad
- A sense of community that is fostered by pride in the accomplishments of each of its members and programs

The Program offers bachelor's degrees in elementary education with majors in: preschool education; primary education (K-3); elementary education (fourth to sixth grade), and teaching of English as a second language. The bachelor's degree in secondary education offers majors in biology, chemistry, English as a second language, general science, history, mathematics, social science, Spanish, and vocational industrial education. In addition, there is a bachelor's degree in special education with majors in speech, language, hearing impairments, and mild handicaps.

The objectives of the Division of Undergraduate Education are to enable students to:

1. Understand the importance of the social and personal mission of the teaching profession.
2. Accept changes that will lead to a broadening of their knowledge and experience as teachers and the capacity to use that knowledge effectively in the teaching-learning process.
3. Analyze social, psychological and philosophical foundations of education.
4. Choose and effectively use resources and materials to improve their teaching methods.
5. Understand and use different educational strategies and techniques effectively.
6. Be exposed to a variety of experiences that will help them to develop the skills, attitudes and abilities needed to become agents of change in the field of education.
7. Develop awareness of the responsibility of keeping abreast in their fields of specialization.
8. Understand, revise and enrich the curriculum in their area of specialization.

9. Be able to incorporate technological innovations into their personal lives and their teaching.
10. Develop the skills that will make them lifelong learners.
11. Understand and use the Standards for Excellence in Teaching and the constructivist approach.

### PROGRAM IN PHYSICAL EDUCATION, SPORT STUDIES AND MOVEMENT

The Program in Physical Education, Sports Studies and Movement is committed to the development of competent physical education teachers, as well as athletics programs, health-related programs, and student services.

Strong efforts are centered on providing the teacher candidate with the scientific foundations, sports skills and historical perspective of this field, within the general objectives of education.

The intercollegiate, intramural and community services programs are an integral part of the Program, promoting effective management of physical facilities, as well as of economic and human resources. This integration provides an excellent experience in the development of a complete professional in this field.

The objectives of the Physical Education Program are to enable the student to:

1. Develop professional knowledge of the current tendencies and developments in physical education.
2. Analyze the legal framework that regulates the physical education field.
3. Develop techniques, strategies, and procedures in evaluation applied to physical education.
4. Develop policies and educational programs in adapted physical education.
5. Develop techniques, procedures, and administrative practice in the administration of physical education, recreation and interschool competition.
6. Help to improve the quality of life for society.
7. Promote students' use of computers and audio-visual equipment in the process of teaching physical education and in the management of sports events.
8. Develop the theory, conceptual knowledge, technical skills, and attitudes needed to become an effective physical education teacher.
9. Develop knowledge of the scientific foundations of physical education and sports.

### STAFF

**Israel Rodríguez Rivera** / Acting Dean

**Jorge H. Garófalo** / Associate Dean, Physical Education Department

**Israel Rodríguez Rivera** / Associate Dean, Undergraduate Program

**Martiza Oyola-Vázquez** / Associate Dean for Student Services

**Carmen D. Rodríguez** / Director, Administrative Services

### FACULTY

**Wilfredo Alicea-Rolón**, / Associate Professor  
MS, University of Puerto Rico

**Gladys Betancourt-Santos** / Associate Professor  
EdD, Interamerican University

**Angela Candelario-Fernández** / Professor  
PhD, Fordham University

**Lymari Candelario-Piñeiro** / Assistant Professor  
EdD, Interamerican University of Puerto Rico

**Rafael Cartagena-Rodríguez** / Professor  
EdD, Nova University

**Evelyn Castro-Silva** / Assistant Professor  
MA, Universidad Metropolitana

**Dennis E. Cumpiano-Carrero** / Associate Professor  
MA, New York University

**Pilar Dávila-Santos** / Assistant Professor  
MAEd, Universidad del Turabo

**Ana T. De la Vega-Morell** / Associate Professor  
MA, Inter American University

**Luis V. Dieppa-Roque** / Assistant Professor  
MS, Herbert Lehman College

**Olga Espinosa-Dávila** / Associate Professor  
MA, University of Puerto Rico

**Jorge H. Garófalo-Pastrana** / Professor  
PhD, Touro University International

**Angel M. Ginorio-Martínez** / Assistant Professor

MEd, Inter American Univesity

**Juan M. González-Lamela** / Professor  
EdD, Nova University

**Elaine Guadalupe-Ahedo** / Instructor  
MEd, Universidad del Turabo

**Mayra Jiménez-Ramírez** / Assistant Professor  
MS, University of Puerto Rico

**Sayra Maldonado** / Instructor  
MA, University of Puerto Rico

**Nydia E. Marini Bonilla** / Associate Professor  
PhD, New York University

**David Méndez** / Associate Professor  
PhD, New York University

**Juana A. Mendoza-Claudio** / Associate Professor  
EdD University of Massachussets, Amherst

**Luis A. Mondríguez-Torres** / Associate Professor  
MA, Ohio State University  
MBA, Universidad del Turabo

**Dulcinia Nuñez-Santos** / Professor  
EdD, Fordham University

**Modesto Ñeco-Quiñones** / Professor  
EdD, Nova University

**Edna M. Oyola-Nuñez** / Assistant Professor  
MA, University of Puerto Rico

**Jesús J. Pérez-Caraballo** / Associate Professor  
EdD, Nova University

**Debbie A. Quintana-Torres** / Professor  
EdD, Unversity of Puerto Rico

**Somar Ramos** / Instructor  
MA, Interamerican University

**Pedro Rivera-Villegas** / Assistant Professor  
PhD, Southern Illinois University

**Eileen Rodríguez-Domenech** / Instructor  
MA, Florida State University

**Israel Rodríguez-Rivera** / Instructor  
MEd, Pontifical Catholic University of Puerto Rico

**Ramón Rodríguez-Rodríguez** / Professor  
PhD Fordham University

**Adlin Solá-Candelario** / Assistant Professor  
MA, Universidad del Turabo

## PROGRAMS OF STUDY

### ASSOCIATE DEGREE IN PERSONAL TRAINING

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>21</b>
<b>Core Courses</b>	<b>39</b>

<b>General Education Courses</b>	<b>(21 credits)</b>
SPAN 155	Introduction to Writing/Reading 3
ENGL 154	Basic Communicative English 3
SPAN 250	Writing Techniques 3
ENGL 155	Advanced Communicative English 3
FSED 100	Freshman Seminar 3
MATH 126	Elementary Algebra 3
INSC 101	Integrated Sciences I 3

<b>Core Courses</b>	<b>(39 credits)</b>
EDUC 171	Human Growth and Development 3
PHED 220	Human Anatomy and Exercise Physiology 3
PHED 210	Health, Hygiene and Nutrition 3
PERT 102	Introduction to Sport Massage Technics 3
PERT 103	Programs for Multiple Exercise 3
PERT 104	Strategical Management for the Personal Trainer 3
PERT 105	Advance Evaluation and Management of Athletic Injuries 3
PERT 106	Design Programs for Cardiovascular and strength training 3
PERT 107	Special Exercise Program Design 3
PERT 108	Analyzes of Current Issues Personal Training 3
PERT 109	Clinical Practicum in Personal Training 3
SPRT 102	Methodology for Training 3
SPRT 106	Fundamental Analyses of Sport Movement 3

### ASSOCIATE DEGREE IN SPORTS TRAINING

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>18</b>
<b>Core Courses</b>	<b>42</b>

<b>General Education Courses</b>	<b>(18 credits)</b>
SPAN 155	Introduction to Writing/Reading 3
ENGL 154	Basic Communicative English 3
SPAN 250	Writing Techniques 3
ENGL 155	Advanced Communicative English 3
FSED 100	Freshman Seminar 3
MATH 126	Elementary Algebra 3

<b>Core Courses</b>	<b>(42 credits)</b>
EDUC 171	Human Growth and Development 3
PHED 222	Swimming and First Aid 3
INSC 101	Integrated Sciences I 3

INSC 102	Integrated Sciences II	3
PHED 355	Evaluation and Research in Physical Education	3
SPRT 101	Sport Pedagogy	3
SPRT 102	Methodology for Training	3
SPRT 103	Physiology for Sport Fitness Performance	3
SPRT 104	Methodology of Physical Training	3
SPRT 105	Philosophical and Ethical Principles for Coaches	3
SPRT 106	Fundamental Analyses of Sport Movement	3
SPRT 108	Sport Management for Coaches	3
SPRT 109	Concepts of Sport Psychology	3
SPRT 110	Sport Coaching Practicum	3

**COURSE DESCRIPTIONS**

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

**EDUC 171**

**Human Growth and Development**

**Three Credits**

The course centers on the study of psychological thought related to growth and development from birth through adolescence, and its implications for the teacher and the school. Changes that occur in human beings from the moment of conception and throughout the different stages of life, such as prenatal, infancy, childhood, adolescence and adulthood, are studied from the physical, psychomotor, social, psychological, and moral viewpoints. Ten hours of classroom observations are part of the requirements.

Requisites: EDUC 106

**MATH 126**

**Fundamental Topics in Mathematics II**

**Three Credits**

This course includes problem-solving, set theory, logic, geometry, measurement, probability, statistics, theory of numbers, and fundamental topics for students of the Schools of Education, Humanities and Office Administration.

**PERT 102**

**Introduction to Sport Massage Technics**

**Three Credits**

This class will have a theory and practical sessions. The students will learn about the concept and history related to massage. Each concept will teach the effects of massage, the benefits, indication and contraindication, the importance of the student and client posture in each massage technique. Also the class will discuss the use of material and equipment that is needed in each modality.

**PERT 103**

**Programs for Multiple Exercises**

**Three Credits**

The course exposes the student to different alternate modes of training to stimulate the different physiological systems of the human body. These exercises stimulate adaptations of the cardiovascular and musculoskeletal systems, in an effective and varied way, to these exercises.

**PERT 104**

**Strategic Management for the Personal Trainer**

**Three Credits**

This course is intended to develop skills and knowledge necessary to develop a personal training business. Basics you should know the personal trainer, personal qualifications for successful practice as a personal trainer, mission and development work plan, how to develop an effective program of exercises appropriate and individualized.

**PERT 105**

**Advance Evaluation and Management of Athletic Injuries**

**Three Credits**

This course consists of theory and practice of the procedures and techniques of evaluation, assessment and value of acute and chronic athletic injuries of the human body (upper and lower extremities). Non traumatic pathologies will be studied, as well as mechanical injuries, muscular skeletal and dermatological disorders.

**PERT 106**

**Design Programs for Cardiovascular and Strength Training**

**Three Credits**

This course is designed to teach students to develop, implement and evaluate training programs on strength and resistant training, the student will learn to create strategies and plan the physical loads through various systems of modern strength and resistant training. The student will have a theoretical and practical training which will develop plans to achieve an improvement in athletic performance for both collective and individual sports.

**PERT 107**

**Special Exercise Program Design**

**Three Credits**

The class will discuss the exercise prescription and health promotion for especial population and will use the guidelines by the American College of Sports Medicine (ACSM) and the National Strength and Conditioning Association (NSCA). The students will also learn about

chronic conditions that require especial and individualize attention.

**PERT 108**

**Analyzes of Current Issues Personal Training**

**Three Credits**

The course analyzes various personal training issues facing Puerto Rico and the world today. Focus is placed toward the analysis and discussion of contemporary issues related to health, physical fitness, and training, and its impact in training methods of personal training.

**PERT 109**

**Clinical Practicum in Personal Training**

**Three Credits**

This course offers the student a practical experience, which integrates with theoretical courses under the direct supervision of a professional. These experiences will take place during the normal working hours of the wellness center of the university. The student will have active participation in the center performing personal fitness duties for the university's community. The student will also have active participation in administrative and organizational areas in personal fitness.

**PHED 210**

**Health, Hygiene and Nutrition**

**Three Credits**

The course covers the theory and practice of the components of wellness and physical fitness lifestyles, once medical records and health risk profiles are developed, and physical fitness levels are established. Students are exposed to information, activities, techniques and strategies to obtain and maintain acceptable levels of physical fitness that allow an effective life. Lifelong sports, weight control, stress management, and nutritional theories will be discussed.

**PHED 220**

**Human Anatomy and Exercise Physiology**

**Three Credits**

The course comprehends the study of gross human anatomy and the physiological changes in the different body systems during physical activity. Joints movement and muscular action are studied together with basic mechanic principles applied to body movements in different sports.

**PHED 222**

**First Aid and Swimming**

**Three Credits**

The course covers the theory, methodology and practice of swimming and first aid. Swimming styles, such as freestyle, backstroke, and breaststroke, are emphasized. Survival modalities such as back and side sliding are practiced as

well. Basic techniques of first aid, in accordance with American Red Cross guidelines, are discussed and practiced.

**PHED 355**

**Evaluation and Investigation in Physical Education**

**Three Credits**

Throughout the course students gain knowledge about different techniques and methods in measurement, assessment, evaluation and investigation processes, in relation to relevant objectives in Physical Education. Data from tests are statistically evaluated by students, who are also initiated in basic research methodology.

**SPRT 101**

**Sport Pedagogy**

**Three Credits**

Study of the theory and practice on the process of teaching and learning of the sport in the tactical, technical aspects and mental skills. It emphasizes itself in the to know the media and teaching methods of the sports skills as the organization of a session training for the children and young athletes.

**SPRT 102**

**Methodology for Training**

**Three Credits**

Study of the principles and methods of training for childlike and youthful in practice of the sport. It understands a theoretical perspective on the capacity of sports performance, the phases of sports formation, the demands of controls and the competitions of the children and young.

**SPRT 103**

**Physiology for Sport Fitness Performance**

**Three Credits**

It studies the biological bases of the effects of the physical exercise in the training in the youthful and childlike ages. Basic principles for the improvement of the physical capacities with a focus in the prevention of the inconveniences by excessive loads in the sports training are established. It studies the biological bases of the effects of the physical exercise in the training in the youthful and childlike ages. Basic principles for the improvement of the physical capacities with a focus in the prevention of the inconveniences by excessive loads in the sports training are established.

**SPRT 104**

**Methodology of Physical Training**

**Three Credits**

It understands the study on the media and methods of the conditioning of the physical capacities and coordinative in the sports preparation of the youthful and childlike athletes. As an orientation in the planning and organization

of the loads of optimum training by its phases of biological matured.

**SPRT 105**

**Philosophical and Ethical Principles for Coaches**

**Three Credits**

Study of the ethical and philosophical principles of the behavior that their compliance they cause they are a successful coach for the integral development of the children and youths in the motivation of their sports practice. It understands the development of a code of ethics and social responsibility with the development of the equity, inclusion and solidarity of the sports programs.

**SPRT 106**

**Fundamental Analyses of Sport Movement**

**Three Credits**

Study of the bases to understand the analysis of the mechanics of the movement in the sports technique and how to utilize you said know-how in order to improve the performance of the skills identifying and correcting the errors in the execution of the athletes.

**SPRT 107**

**First aid for Specific Sport Injuries**

**Three Credits**

Study of the bases and guides of the intervention protocols in emergency situations case in wounds you specify of the sports practice. As the management of a prevention strategies series in wounds by sport, the reduction of the risks of the practice and the development of a contingency plan.

**SPRT 108**

**Sport Management for Coaches**

**Three Credits**

Study of the organization and administration of the childlike sports programs and youthful as for devising a compatible philosophy with the objectives for the integral development of the children and young. Establishing health risks reducing programs and negligence, plans of enlarging the economic incomes and the organization of sports events.

**SPRT 109**

**Concepts of Sport Psychology**

**Three Credits**

It understands the introduction to the study of the conduct of the athletes in terms of the motivation and learning, the management of the anxiety, the techniques of relaxation and the planning of the mental training.

**SPRT 110**

**Sport Coaching Practicum**

**Three Credits**

Includes an internship in their field of sport in a club or federation community with children and youth. Emphasis is placed on planning the training sessions, organization of practices such as learning the technical skills and tactics as the application of physical loads.

# JOSÉ DOMINGO PÉREZ SCHOOL OF ENGINEERING

## José Domingo Pérez School of Engineering Distinguished Professor:

**William R. Dawes, Jr., PhD in Physics, University of Arizona**

## DOE Samuel P. Massie Chair of Excellence:

**Roberto Lorán Ph.D., Vice Chancellor**

### ADMINISTRATIVE STAFF

**Jack T. Allison / Dean**

**José R. Deliz / Associate Dean**

**Daisy Román / Administrative Director**

**Luz Vilches / Director, Engineering Advising Office (EAO) and Student Services**

**Katia Placeres / Secretary**

**Dyanissie Medina / Secretary**

Recognizing the need for engineering professionals in Puerto Rico's accelerating economic environment, in August, 1990 the Ana G. Méndez University System (AGMUS) Board of Trustees approved in August, 1990, the establishment of a School of Engineering at the University of Turabo. The José Domingo Pérez (JDP) School of Engineering started with an initial enrollment of 75 students in Academic Year (AY) 1990/91 and currently offers, certificate and associate degrees in technology, Bachelor's degree programs in Mechanical Engineering, Electrical Engineering, Computer Engineering and Industrial and Management Engineering, and Master of Science degree in Administration of Telecommunications and Network Systems in day and evening sessions. The School is committed to the success of every student and pursues this goal by offering small classes taught by highly qualified faculty, a wide range of student services, modern facilities and equipment, and opportunities for undergraduates to participate in faculty-directed research, special design projects and industrial internships.

The JDP School of Engineering is housed in the modern Sandia National Laboratories Engineering Building, named in recognition of the support provided by the U.S. Department of Energy. This facility includes classrooms, instructional and research laboratories, offices for faculty and staff, meeting and conference rooms, and study rooms.

It was occupied in August of 1992. The building was expanded in 1998 to house seven Electrical Engineering laboratories designed for instructional and research use. In April 2010 was inaugurated the third phase by adding four laboratories, two classrooms, faculty, administrative and student associations offices and, as well as a study room.

The JDP School of Engineering has three engineering academic departments:

- Department of Mechanical Engineering
- Department of Electrical and Computer Engineering
- Department of Industrial and Management Engineering

In addition, the José Domingo Pérez School of Engineering (JDP SOE) has two institutes focused on certificate, associate and Master's degrees in areas of advanced technology

- Institute of Engineering Technology
- Institute of Telecommunications

### **Engineering Programs Accredited by the EAC commission of ABET are:**

- B.S. in Mechanical Engineering
- B.S. in Electrical Engineering
- B.S. in Industrial and Management Engineering

### **Vision**

The vision of the JDP School of Engineering is to become the school of choice for all students interested in a technology or engineering degree, and to be recognized for its excellence in teaching and research.

### **Mission**

The mission of the JDP School of Engineering is:

- To provide our students at all degree levels, certificate, associate, bachelor and graduate, with an excellent education that allows them to become competitive at a national level in their chosen field of expertise, and responsive to the needs of their communities.
- To serve the community through scholarly activities at the pre-college and college levels, through research

and development, and through programs that serve the needs of industry.

### **Technology Curriculum**

The JDP School of Engineering offers academic programs leading to Certificate degrees in Electrical Technology and Renewable Energy, and Computer Technology and Networks, Associate degrees in Mechanical Engineering Technology, Electronic Engineering Technology, Quality Control Engineering Technology, Plastic Engineering Technology and Computer Technology and Networks. These curricula provide the student with the necessary skills in mathematics, science, and communications to pursue a technical career successfully.

The program curricula of the Engineering Technology have many aspects in common. The content of the first two semesters are one hundred percent similar. Students will find that both written and oral communication skills are emphasized in all programs.

The full-time associate degrees students who follow the recommended course schedules can complete the computer technology or engineering technology curriculum in 4 semesters (2 years) Students of the certificate in Computer and Network Technology can complete their program in a period of eighteen months. While students of the Certificate Program in Electrical Technology and Renewable Energy will be able to do it in that one year Program duration for part-time and transfer students will vary, based upon course load and previous course work.

### **Application Process**

The School of Engineering uses the same application procedure as the Universidad del Turabo

### **Admissions Policy**

#### **Freshmen**

The goal of the admissions policy for the Certificate and Associate Degrees Programs of the JDP SOE is to ultimately admit every student who is motivated to study engineering technology or technology. Applicants to Engineering Technology or Technology Programs must satisfy the following admission requirements:

1. A High School Grade Point Average of not less than 2.0 (4.0 being the maximum)
2. Students must have taken the Academic Aptitude Test offered by the College Entrance Examination Board (CEEB).

3. Placement Examination Scores for Mathematics, Spanish and English. The mathematics and the language programs at UT developed these exams in cooperation with the School of Engineering.

### **Transfer Students**

The Director of the Engineering Advising Office (EAO), in coordination with the Associate Dean, oversees the admission process into the technology programs. The Director has established a detailed advising procedure to guarantee consistency of course sequencing, Requisites, transference of courses, and other aspects pertaining to transfer students.

During the initial advising session, the Associate Dean of the School of Engineering fills in and discusses an advising sheet with the new student, explaining which courses were transferred, which courses could not be accepted, and identifying which courses the student needs to complete his/her degree requirements. A copy of the advising sheet is given to the student. The Associate Dean also checks the student's records to make sure that he/she is in the proper major and is eligible for the program.

The requirements for reclassification of students from the JDP SOE Bachelor's degree programs or from other Academic Programs at Universidad del Turabo are the following:

1. A grade point average (GPA) of not less than 2.0/4.0 and a minimum grade of C in all courses.
2. During the initial reclassification session, the Associate Dean of the School of Engineering fills in and discusses an advising sheet with the student, explaining which courses were validated, which courses could not be validated, and identifying which courses the student needs to complete his/her degree requirements.

### **Academic Advising**

All technology students are referred to the Engineering Advising Office to assure proper course sequence with respect to Requisites. The Technology Advising Sheet (please refer to the end of the catalog for a copy) is used for this purpose. As a supplemental activity, all technology students are encouraged to visit the director of technology programs to discuss progress, academic goals, career goals and professional aspects of the technology programs.

## Course Policy

### Requisites

The JDP School of Engineering enforces the Requisites in its Certificate and Associate degrees curriculum. Students who register for a course for which they do not have the necessary Requisites will be dropped from the course before the end of the term, and will be assigned a grade of WA.

### Repeating Courses

Students may repeat a course in order to improve their Grade Point Average. Credit will be given for the higher grade, which will be used to compute the Grade Point Average. If the grade of the second attempt is the same as the first, they will both be used for cumulative average, but only once for the graduation average. Courses with grades of D or F will not count toward graduation and must be repeated. A student in the School of Engineering must complete all courses needed to fulfill graduation requirements (both engineering technology and non-engineering technology) with a grade of C or better.

Students are permitted three attempts to complete any course needed to fulfill graduation requirements (both engineering technology and non-engineering technology) with a grade of C or better. Courses for which a student receives a "W, "WA, "WR, or "WN are not counted as attempts. After two unsuccessful attempts, the student is placed on academic probation. The student must meet with his or her academic advisor to develop a plan to successfully complete the course on the third attempt. If the student does not successfully complete the course on the third attempt, the student is suspended from the JDP School of Engineering but may transfer into another academic program at the University of Turabo. Readmission to the JDP School of Engineering is at the discretion of the Dean of the JDP School of Engineering. Students may not repeat a course until a grade has been given. Students may be eligible for financial aid when repeating a course. Repeated courses will be considered in determining a student's satisfactory progress.

### Withdrawals

See the established university policy.

### Graduation Requirements

Students of the JDP School of Engineering will be eligible to receive a Certificate or Associate degree after meeting the following requirements:

1. Completion of all the required course work.

2. Completion of the number of credit hours required for the degree, with a minimum Grade Point Average of 2.00
3. At the least, transfer students must complete the last fifteen (15) credit hours of a Certificate or Associate degree at the JDP School of Engineering.
4. The minimum Grade Point Average in their major is 2.00

### Graduating Student Profile

Students that complete any of the technology programs at the Universidad del Turabo develop, as a minimum, the following characteristics:

- An ability to apply knowledge of mathematics, science, and technology
- An ability to repair systems, components, or processes to meet desired needs
- An ability to function on multidisciplinary teams
- An ability to analyze and interpret data
- An understanding of ethical responsibility
- An ability to communicate effectively
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern tools necessary for technical practice

## INSTITUTE OF ENGINEERING TECHNOLOGY

**Nelson Martínez Ortiz**, Director

B.S. in Electrical Engineering, Candidate for ME in Manufacturing Engineering

The Institute of Technology is a division of the JDP School of Engineering (JDP SOE) and is supervised by the Dean of Engineering with the aid of a program director. In general, graduates from this program will have a theoretical and practical knowledge of the rapidly changing world of technology. The curriculum also provides for developing the student's knowledge and skills in data analysis, problem solving, computer applications and effective communication in English and Spanish. Graduates will also have the necessary educational background to continue studies towards a Associate or Bachelor's degree in a related engineering area.

**FACULTY**

- Blanca Pereira** / Lecturer  
Master Business Administration, University of Turabo
- Carmen Collazo** / Lecturer  
ME Management Systems, University of Puerto Rico
- Milton Delgado** / Lecturer  
BS Mechanical Engineering, University of Turabo
- Henry Contreras** / Lecturer  
MS Civil Engineering, Polytechnic University
- Arturo Llavona** / Lecturer  
MS Civil Engineering, University of Puerto Rico
- Loaiza Maldonado** / Lecturer  
MEM, University of Puerto Rico
- Jose Pérez** / Lecturer  
BS Electrical Engineering, Georgia Institute of Technology
- Erick Méndez** / Lecturer  
MS, Nuclear Engineering, University of Puerto Rico
- Maritza Gómez** / Lecturer  
BS Industrial Chemistry, University of Turabo
- Daniel Mera** / Lecturer  
MS Computer Engineering, University of Puerto Rico
- Norma Rivero** / Lecturer  
MSQM, University of Puerto Rico
- Ebel Rodríguez** / Lecturer  
Master Information System Management, University of Turabo
- José Ortiz** / Lecturer  
BS Electrical Engineering, University of Turabo
- Raquel Carrión** / Lecturer  
Master Degree in Technology, University of Phoenix

**ASSOCIATE DEGREE IN ELECTRONIC ENGINEERING TECHNOLOGY**

The program focuses on the major areas of computer, instrumentation and communication systems. Graduates will also have the necessary educational background to continue studies towards a Bachelor's Degree in Electrical Engineering.

**Vision of the Electronic Engineering Technology Program**

To become the number one choice for all motivated students who wish to pursue an electronic engineering technology education in Puerto Rico.

**Mission of the Electronic Engineering Technology Program**

To prepare electronic engineering technology graduates professionally, so that they will be capable of fulfilling the technological needs of society and excel in the installation, troubleshooting and maintenance of electronic systems.

**Objectives of the Electronic Engineering Technology Program**

1. To help fulfill the need for technicians in the field of electronic engineering.
2. To deliver instruction using current technology, the most modern equipment, test instruments and computers.
3. To ensure the intellectual development of students enrolled in the program.
4. To develop technicians capable of undertaking leadership roles in professional, civic and social environments.

**ELECTRONIC ENGINEERING TECHNOLOGY CURRICULUM**

(58 credits; 2 years)

**FIRST YEAR**

1 <sup>st</sup> Semester	(15 credits)	
FSEN 100	Introduction to Engineering Technology	3
MATH 121	Intermediate Algebra	3
HUMA 111	Civilizations and Universal Culture I	3
ENGL 152	Intermediate Communicative English II	3
SPAN 152	Fundamentals of Reading and Writing	3

2<sup>nd</sup> Semester (14 credits)

EETE 220	Fundamentals of DC/AC Electronics	3
EETE 220L	Lab. of Fundamentals of DC/AC Electronics	1
MATH 151	Algebra and Trigonometry I	4
SPAN 250	Writing Techniques	3
ENGL 153	Advanced Communicative English	3

**SECOND YEAR**

1st Semester (15 credits)		
EETE 225	Fundamentals of Digital Logic	3
EETE 225L	Lab. of Fundamentals of Digital Logic	1
ECTE 122	Introduction to Computer Programming	3
EETE 230	Principles of Electronic Communications	3
EETE 230L	Lab. of Principles of Electronic Communications	1
MATH 152	Algebra and Trigonometry II	4
2 <sup>nd</sup> Semester (15 credits)		
EETE 250	Fundamentals of Electronic Instrumentation & Calibration	3
EETE 260	Review for License Examination of Electronic Technology	1
SOSC 111	Individual, Community, Government and Social Responsibility I	3
ENGL 231	Research and Writing	3
_____	Engineering Elective	4

### ASSOCIATE DEGREE IN MECHANICAL ENGINEERING TECHNOLOGY

The program emphasizes the analysis, installation, estimating, troubleshooting, and maintenance of new and existing mechanical systems. Graduates will also have the necessary educational background to continue studies towards a Bachelor's degree in mechanical engineering.

#### Vision of the Mechanical Engineering Technology Program

To become the first choice for all motivated students who wish to pursue a mechanical engineering technology education in Puerto Rico.

#### Mission of the Mechanical Engineering Technology Program

To prepare mechanical engineering technology graduates professionally, so that they will be capable of fulfilling the technological needs of society and excel in the installation, troubleshooting and maintenance of mechanical systems.

#### Objectives of the Mechanical Engineering Technology Program

1. To deliver instruction using current technology, the most modern equipment, test instrument and computers.
2. To help fulfill the need for technicians in the field of mechanical engineering.
3. To ensure the intellectual development of students enrolled in the program.
4. To develop technicians capable of undertaking leadership roles in professional, civic and social environments.

### MECHANICAL ENGINEERING TECHNOLOGY CURRICULUM

(58 credits; 2 years)

#### FIRST YEAR

1<sup>st</sup> Semester (15 credits)

FSEN 100	Introduction to Engineering Technology	3
MATH 121	Intermediate Algebra	3
HUMA 111	Civilizations and Universal Culture I	3
SPAN 152	Fundamentals of Reading and Writing	3
ENGL 152	Fundamentals of Reading and Writing	3

2<sup>nd</sup> Semester (14 credits)

METE 233	Fundamentals of Refrigeration and Air Conditioning	3
METE 233L	Lab. of Fundamentals of Refrigeration and Air Conditioning	1
MATH 151	Algebra and Trigonometry I	4
SPAN 250	Writing Techniques	3
ENGL 153	Advanced Communicative English	3

#### SECOND YEAR

1<sup>st</sup> Semester (14 credits)

ENGI 161	Engineering Technology Graphics	3
METE 235	Fundamentals of Properties of Materials	3
METE 235L	Lab. of Fundamentals of Properties of Materials	1
ECTE 122	Introduction to Computer Programming	3
MATH 152	Algebra and Trigonometry II	4

2<sup>nd</sup> Semester (15 credits)

METE 245	Fundamentals of Manufacturing Processes Technology	3
METE 245L	Lab. of Fundamentals of Manufacturing Processes Technology	1
METE 247L	Laboratory of Fundamentals of Welding	1
ENGL 231	Research and Writing	3
SOSC 111	Individual, Community, Government and Social Responsibility I	3
_____	Engineering Elective	4

**ASSOCIATE DEGREE IN QUALITY CONTROL  
ENGINEERING TECHNOLOGY**

The program focuses on areas of quality assurance for industrial or service environments. Graduates will also have the necessary educational background to continue studies towards a Bachelor’s Degree in Industrial and Management Engineering.

**Vision of the Quality Control Engineering Technology Program**

To become the number one choice for all motivated students who wish to pursue an education in the field of quality control engineering technology in Puerto Rico.

**Mission of the Quality Control Engineering Technology Program**

To prepare quality control engineering technology graduates professionally, so that they will be capable of fulfilling the technological needs of society and excel in the maintenance and improvement of quality systems.

**Objectives of the Quality Control Engineering Technology Program**

1. To deliver instruction using current technology, the most modern equipment, test instruments, and computers.
2. To help fulfill the need for technicians in the fields of quality assurance.
3. To ensure the intellectual development of students enrolled in the program.
4. To develop technicians capable of undertaking leadership roles in professional, civic and social environments.

**QUALITY CONTROL ENGINEERING TECHNOLOGY  
CURRICULUM**

(55 credits; 2 years)

**FIRST YEAR**

1st Semester	(15 credits)
FSEN 100	Introduction to Engineering Technology 3
MATH 121	Intermediate Algebra 3
HUMA 111	Civilizations and Universal Culture I 3
SPAN 152	Fundamentals of Reading and Writing 3
ENGL 152	Fundamentals of Reading and Writing 3

2nd Semester	(13 credits)
QETE 240	Quality Management Principles and Improvement Tools 3
MATH 151	Algebra and Trigonometry I 4
SPAN 250	Writing Techniques 3
ENGL 153	Advanced Communicative English 3

**SECOND YEAR**

1st Semester (14 credits)

QETE 245	Fund. of Statistical Process Control/Metrology	3
QETE 245L	Lab. of Fundamentals of Statistical Process Control/Metrology	1
ECTE 122	Introduction to Computer Programming	3
SOSC 111	Individual, Community, Government and Social Responsibility I	3
MATH 152	Algebra and Trigonometry II	4

2nd Semester (13 credits)

QETE 250	Introduction to Technical Engineering Management	3
QETE 255	Fundamentals of Lean Manufacturing-Six Sigma	3
ENGL 231	Research and Writing Engineering Elective	3
		4

**ASSOCIATE DEGREE IN COMPUTER TECHNOLOGY &  
NETWORKS**

The program focuses in areas of installation, estimating and maintenance of new and existing computerized systems and network infrastructure. Graduates will also have the necessary educational background to continue studies toward a Bachelor’s Degree in Computer Engineering.

**Vision of the Computer Technology and Networks Program**

To become the first choice for all motivated students who wish to pursue an education in the field of Computer Technology and Network in Puerto Rico.

**Mission of the Computer Technology and Networks Program**

To prepare computer technology and networks graduates professionally, so that they will be capable of fulfilling the technological needs of society and excel in the maintenance and improvement of computer systems.

**Objectives of the Computer Technology and Networks Program**

- To deliver instruction using current technology, the most modern equipment, test instruments and computers.
- To help fulfill the need for technicians in the fields of computer and network installation, maintenance and repair, particularly in the eastern and southeastern region of Puerto Rico.

- To ensure the intellectual development of students enrolled in the program.
- To develop technicians capable of undertaking leadership roles in professional, civic, and social environments.

### COMPUTER TECHNOLOGY AND NETWORKS CURRICULUM

(58 credits; 2 years)

#### FIRST YEAR

1st Semester		(15 credits)
FSEN 100	Introduction to Engineering Technology	3
HUMA 111	Civilization and Universal Culture I	3
MATH 121	Intermediate Algebra	3
ENGL 152	Fundamentals of Reading and Writing	3
SPAN 152	Fundamentals of Reading and Writing	3

2nd Semester (14 credits)

EETE 223	Fundamentals of Computer Electronic	3
EETE 223L	Laboratory of Fundamentals of Computer Electronic	1
MATH 151	Algebra and Trigonometry I	4
ENGL 153	Advanced Communicative English	3
SPAN 250	Writing Techniques	3

#### SECOND YEAR

1st Semester (15 credits)

CTEC 220	Fundamentals of Computers, Peripherals and Operating Systems	3
CTEC 220L	Lab. of Fund. of Computers, Peripherals and Operating Systems	1
TCOM 335	Principles of Telecommunications and Networking	3
TCOM 335L	Laboratory of Principles of Telecommunications and Networking	1
ECTE 122	Introduction to Computer Programming	3
MATH 152	Algebra and Trigonometry II	4

2nd Semester (14 credits)

TCOM 350	Fundamentals of Networking Infrastructure Management	3
TCOM 350L	Laboratory of Fundamentals of Networking Infrastructure Management	1
CTEC 230	Fundamentals of Intermediate Programming	3
ENGL 231	Research and Writing	3
	Recommended Elective	4

### ASSOCIATE DEGREE IN ELECTRICAL TECHNOLOGY AND RENEWABLE ENERGY

The program focuses on the major areas of Electrical Technology and Renewable Energy. Graduates will also have the necessary educational background to continue studies towards an Associate Degree in Electrical Technology and Renewable Energy.

### Vision of the Electrical Technology and Renewable Energy Program

To become the number one choice for all motivated students who wish to pursue technology electrical and renewable energy education in Puerto Rico.

### Mission of the Electrical Technology and Renewable Energy Program

To prepare electrical technology and renewable energy graduates professionally, so that they will be capable of fulfilling the technological needs of society and excel in the installation, troubleshooting and maintenance of electrical systems.

### Objectives of the Certificate in Electrical Technology and Renewable Energy Program

- Help fulfill the need for technicians in the fields of Electrical Technology and Renewable Energy.
- Provide the knowledge and necessary skills required of the most recent electrical technology and renewable energy.
- Ensure the intellectual development of students enrolled in the program.
- Develop technicians capable of undertaking leadership roles in professional, civic, and social environments.

### ASSOCIATE DEGREE IN ELECTRICAL TECHNOLOGY AND RENEWABLE ENERGY CURRICULUM

(57 credits; 2 years)

#### FIRST YEAR

1st Semester (13 credits)

ETRE 160	Principles of Electrical Circuits and Power	3
ETRE 160L	Lab. of Principles of Electrical Circuits and Power	1
ETRE 165	Fundamentals of Renewable energy	3
MATH 120	Elementary Algebra	3
SOSC 111	Individual, Community, Government and Social Responsibility I	3

2nd Semester (15 credits)

ETRE 170	Introduction to Electrical Installations and NEC	3
ETRE 170L	Lab. of Introduction to Electrical Installations and NEC	1
ETRE 175	Electrical machinery	3
ETRE 175L	Lab. of Electrical Machinery	1
ETRE 180	Fund. of Photovoltaic and Wind Power System	3

ETRE 180L	Lab. of Fund of Photovoltaic and Wind Power Syst.	1
MATH 121	Intermediate Algebra	3

SECOND YEAR

1st Semester	(14 credits)	
ETRE 260	Electrical Installations	3
ETRE 265	Principles of Electrical Controls and PLC	3
ETRE 265L	Lab. of Principles of Electrical Controls and PLC	1
ETRE 181L	Lab. of Photovoltaic and Wind Power Systems Installation	1
ENGL 152	Fundamentals of Reading and Writing	3
SPAN 152	Fundamentals of Reading and Writing	3

SECOND YEAR

2nd Semester (15 credits)		
ETRE 280	Review for License Examination of Electrician	3
FSEN 100	Introduction to Engineering Technology	3
HUMA 111	Civilizations and Universal Culture I	3
ENGL 153	Advanced Communicative English	3
SPAN 250	Writing Techniques	3

COURSE DESCRIPTIONS

**CTEC 200**

**Computers & Peripherals Installation, Maintenance, and Support  
Four Credits**

Three lecture hours and one three-hour lab per week. This course covers all components and ancillary systems comprising a PC. It provides an introduction to every component and analyzes its functionalities and weaknesses. It analyzes the role of each component in supporting an application and the user functional goal. It presents the PC as a package of matched components and dissects all of its internals individually and integrally. Some of the components covered are the CPU, RAM, display apparatus, ROM, fixed disk, USB, network adapter, CD-ROM, CDRs, DVDs, floppy disk, serial and parallel ports, mouse, keyboard and others. The course also covers the most critical peripherals such as printers, scanners, digital imagery equipment, modems, and others.

Requisite: ENGI 121

**CTEC 205**

**Computers, Peripherals and Operating Systems  
Three Credits**

Two lecture hours and one three –hours lab per week. This course covers all components and ancillary systems comprising a personal computer. It provides an introduction to every component and analyses its functionalities and weaknesses. It presents the PC as a package of matched components and dissects all of its internals individually and

integrally. Also this course covers all software components comprising a PC. It analyses the role of each components in supporting an application and the user functional goal. Some of the software components are the operating system and its subcomponents. It covers in detail software problems.

Requisite: ENGI 121

**CTEC 210**

**Operating Systems, Installation & Configuration  
Four Credits**

Three hours of lecture and one three-hour lab per week. This course covers all software components comprising a PC. It provides an introduction to every component and analyzes its functionalities and weaknesses. It analyzes the role of each component in supporting an application and the user functional goal. It presents the PC as a package of matched components and dissects all of its internals individually and integrally. Some of the software components are the operating system and its sub-components, data communications software components, DOS components, peripheral administration components, Windows Systems architecture, disk operating software, essential user applications, memory management software, software upgrades management. It covers in detail the diagnosis, procedures and resolution of software problems. It also deals with virus problems and the most effective software solutions. Finally, it covers networking from a software perspective.

Requisite: ENGI 121

**CTEC 220**

**Fundamentals of Computers, Peripherals and Operating Systems  
Three Credits**

This course covers all components and ancillary systems comprising a personal computer. It provides an introduction to every component and analyses its functionalities and weaknesses. It presents the PC as a package of matched components and dissects all of its internals individually and integrally. Also this course covers all software components comprising a PC. It analyses the role of each components in supporting an application and the user functional goal. Some of the software components are the operating system and its subcomponents. It covers in detail software problems.

Requisites: EETE 223, EETE 223L

**CTEC 220L**

**Laboratory of Fundamentals of Computers, Peripherals and Operating Systems**

This laboratory course provides students with theoretical concepts and practical skills in using personal computers and peripherals. It discusses the concepts of "motherboard", input and output ports, power supplier, update, preventive maintenance, among others. The issues are addressed to the operating principles, selection and specifications for personal computers. Also this course prepares students to take the certification exam for personal computers "A +".

Co-requisite: CTEC 220

**CTEC 222**  
**Principles of Computers, Peripherals and Operating Systems**

**Three Credits**

This course covers all components and ancillary systems comprising a personal computer. It provides an introduction to every component and analyses its functionalities and weaknesses. It presents the PC as a package of matched components and dissects all of its internals individually and integrally. Also this course covers all software components comprising a PC. It analyses the role of each components in supporting an application and the user functional goal. Some of the software components are the operating system and its subcomponents. It covers in detail software problems.

Requisite: EETE 225

**CTEC 310**  
**Data Communications and Networks**

**Four Credits**

Three hours of lecture and one 3-hour lab per week. Basic principles involved in the design and implementation of data networks. The course covers the historical evolution of distributed computing, which has taken place as a result of advancing technologies. It identifies the types of communications networks that have evolved, based on the various technological configurations. The different electrical characteristics of data transmission are also covered, along with the basic laws and theories that determine their use. The various techniques that enable the receiving of data and bit error protocols are discussed in detail, along with the techniques to control transmission errors and flow. Standard data links and encryption protocols are also covered as well as the concepts of "computer communities". Finally, the protocols for the implementation of Data Communications are presented.

Requisite: TCOM 300

**CTEC 320**  
**Introduction to Programming with C++**

**Four Credits**

Five hours lecture and laboratory per week. This course will develop in the student of the program of the Associated

Degree in Technology of Computers and Networks the theoretical knowledge and the necessary technical skills in the use and handling of the programming in C ++ language. It analyzes the basic elements of the programming such as; resolve problems, algorithms and development of flowchart. Also there will be discussed variables, structures, functions, arrangements and sequences.

Requisite: ENGI 121, MATH 151

**EETE 210**  
**DC/AC Electronics**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Basic concepts in the theory of electronic circuit analysis; semiconductor theory; the diode; bipolar junction transistors and BJT amplifiers, and field-effect transistors. Also covers frequency response, multistage and operational amplifiers.

Requisite: PHSC 120

**EETE 212**  
**Digital Electronics**

**Four Credits**

Three hours of lecture and one three-hour lab per week. The course covers number systems and codes, digital electronics, signals and switches, logic gates and Boolean algebra, combinational logic circuits, flip-flops and related devices. Digital Arithmetic: operations and circuits. Code converters, multiplexers and demultiplexers.

Requisite: PHSC 120

**EETE 214**  
**Microprocessors**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Covers an introduction to microprocessor-based systems. Includes the 80X86 microprocessor family, software architecture, programming, and hardware architecture. Advanced topics.

Requisite: EETE 212

**EETE 216**  
**Industrial Electronics**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Covers the theory and practice of modern electronic devices that are used in industrial applications. Includes the use of the transistor switch as a decision circuit maker; programmable logic controllers; triacs and thyristors.

Requisite: EETE 210

**EETE 218**

**Communications**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Introductory topics of; amplitude modulation (AM): transmission and reception; single-sideband communications; frequency modulation (FM): transmission and reception; television and communications techniques.

Requisite: EETE 210

**EETE 220**

**Fundamentals of DC/AC Electronics**

**Three Credits**

In this course the student will learn the basic concepts of the theory of analysis of electronic circuits; theory of semiconductors; the diode; Bipolar Junction Transistor; amplifiers BJT and field effect transistors. In addition it covers response of frequencies and operational amplifiers and multistages. There will be analyzed circuits that are used in communication equipments, systems of sound and instrumentation.

Co-requisite: MATH 121

**EETE 223**

**Fundamentals of Computers Electronic**

**Three Credits**

The course covers the theoretical concepts of number systems and codes, digital electronics, signals and switches, logic modules and Boolean Algebra, combinational logic circuits and related devices. Digital Arithmetic: operations and circuits. Code converters, multiplexers and demultiplexers. Furthermore analyze digital circuits that are used in computers, communications systems and medical equipment.

Co-requisite: MATH 121

**EETE 240**

**Review for License Examination of Electronic**

**Technician**

**One Credit**

Two hours lecture per week. This course takes as an intention to revise all the concepts that are necessary to take the final examination for electronics technician. It will cover the concepts of dc/ac, semiconductors, digital electronics, microprocessors, industrial electronics, communications, and instrumentation. At the end of the course a test will be offered, simulating the final examination for electronics technicians.

Requisite: All courses with EETE code of the previous semester approved

Co requisite: EETE 214, EETE 218, ICET 210

**ENGI 101**

**Introduction to Engineering Technology**

**Three Credits**

Three hours of lecture/workshop per week. Introductory required course for all first year associate degree students in computer technology or engineering technology program. Introduction to the various specialties within the engineering and technical profession. Basic concepts of engineering design and technical communication. Laws and ethics of the engineering and technical profession.

Requisite: Admission to Associate Degree Program in Computer Technology or Engineering Technology

**ENGI 121**

**Introduction to Computers**

**Three Credits**

Three hours of lecture-lab discussion per week. Introductory required course for all first year associate degree students in computer technology or engineering technology program. Introduction to the history of computers. Familiarization with basic computer software and hardware. Use of software packages such as Word, Excel, Power Point. Design of Internet Web pages.

Requisite: Admission to Associate Degree Program in Computer Technology or Engineering Technology

**ENGI 161**

**Engineering Technology Graphics**

**Three Credits**

Includes principles of engineering drawing with sketching and computer graphics (SolidWork) with an introduction to descriptive geometry. The fundamentals of orthographics projections, pictorials, auxiliary views, sectioning, dimensioning, tolerancing, working drawings are presented. Also the student applies Freehand techniques to sketch oblique and isometric 3D projections.

Co-Requisite: MATH 151

**ENGI 223L**

**Intermediate Programming Laboratory**

**One Credit**

This is an intermediate-level course Lab in computer programming. Hands on workshops and experimental practice on two or three project. Development, analysis, simulation, and implementation of a major design project to solve a specific problem in real world.

Co-requisite: ENGI 223

**ETRE 110**

**Fundamentals of Electrical Circuits and Power  
Five Credits**

Seven Lecture -Lab. hours per week. This course introduces the basic concepts of electrical circuits and electric power. The student will have the opportunity to learn and to apply the knowledge of electrical safety, Ohm's Law, Kirchoff's Law, resistive, capacitive and inductive circuits, magnetism and electromagnetism. In addition the three-phase system, transformers and power factor will be studied. The course will be complemented by a section of laboratory for the application of its theoretical concepts.

Co-requisite: MATH 107

**ETRE 115**

**Introduction to Renewable Energy  
Two Credits**

Four hours lecture. In this course the student will acquire the basics concepts of renewable energy systems. It will examine global climate change, energy use and dependence on fossil fuels, sustainable energy and vision of current energy demand and patterns supplied. In addition the student will know the rules and regulations that govern this technology.

**ETRE 120**

**Electrical Installations and NEC  
Four Credits**

Seven hours lecture-lab per week. This course uses the National Electrical Code (NEC) and other regulations for development of electrical installations on houses and buildings. The student will discuss the following topics; interior and exterior wiring, electrical panels' installation, and lighting fixtures. Use of electrical plans. The course will be supplemented by a laboratory section for the application of theoretical concepts.

Requisite: ETRE 110

**ETRE 125**

**Fundamentals of Electrical Machinery  
Four Credits**

Seven hours lecture-lab per week. In this course the student will acquire and apply the theoretical knowledge and the necessary skills in the use and handling of electrical machines. They will study functioning, installation, maintenance and troubleshooting of these equipment. Motors, generators and electrical machines will be used in the laboratory practices.

Requisite: ETRE 110

**ETRE 130**

**Photovoltaic System and Installation  
Three Credits**

Four hours lecture-lab per week. In this course the student will acquire the knowledge's on photovoltaic systems. Will be studied their parts, operation, installation, and maintenance. PV cells, batteries, charge controllers, inverters and other equipment will be used in the laboratory. The rules and regulations governing this technology will be discussed and applied.

Requisite: ETRE 110, ETRE 115

**ETRE 140**

**Supervised Project  
Three Credits**

Seven hours lecture-lab per week. In this course the student will apply knowledge gained in previous courses. Through this project they will develop skills that are needed to work in the field of electrical industry. The student will be assessed by their instructor/mentor in the workshop of the project and their class.

Requisite: All courses with ETRE code of the previous semester approved

**ETRE 240**

**Electronic for Electricians  
Two Credits**

Four hours lecture-lab per week. This course will acquire the basics of electronic circuits. The student will have the opportunity to learn and apply knowledge of diodes, transistors, amplifiers, power supplier, transducers, and integrated circuits. The course will be supplemented by a laboratory section for the application of the theoretical concepts.

Requisite: ETRE 110

**ETRE 245**

**Wind Power System and Installation  
Three Credits**

Three hours lecture- lab per week. In this course the student will acquire knowledge and skills to work with Wind Power Systems. Their parts, operation, installation, and maintenance will be discussed. Wind turbines, anemometer, inverters and other equipment will be used in the laboratory. The rules and regulations governing this technology will be included and applied.

Requisite: ETRE 115, ETRE 125

**ETRE 250**

**Electrical Controls and PLC**

**Four Credits**

Four hours lecture practice per week. This course is designed for the student to acquire knowledge and skills in the use, installation, operation and maintenance of motor controls, electric generators, and other machines. It will study the characteristics of relays, magnetic contactors, solenoids and others electrical controls devise. Also they apply the concepts of Programmable Logic Controllers (PLC). The course will be supplemented by a laboratory section.

Requisite: ETRE 125

**ETRE 255**

**Review for License Examination of Electrician**

**Three Credits**

Three hours lecture/lab per week. The basic knowledge and skills of previous courses will be reviewed. The concepts of analysis, application, operation, and maintenance of electrical systems will be discussed again. Problems in electrical installations, machinery, three phase systems and controls are included to provide the student with the knowledge and skills necessary to take the electrician's licensing exam offered by the government of Puerto Rico.

Requisite: All courses with ETRE codes of the previous semester approved

Co-requisite: ETRE 245, ETRE 250 or both courses approved

**ETRE 260**

**Electrical Installations**

**Three Credits**

This theoretical and practical course contains the installation techniques used in industrial sectors and planning and installation of the low and high voltage distribution panels. It also, contains the methods of testing and maintenance of the low and high voltage distribution panels. The application of safety rules and procedure in this course.

Requisites: ETRE 170 Introduction to Electrical Installations and NEC, ETRE 170L Lab. of Introduction to Electrical Installations and NEC

**ETRE 265**

**Principles of Electrical Controls and PLC**

**Three Credits**

This course is designed for the student to acquire knowledge and skills in the use, installation, operation and maintenance of motor controls, electric generators, and other machines. It will study the characteristics of relays,

magnetic contactors, solenoids and others electrical controls devise. Also they apply the concepts of Programmable Logic Controllers (PLC).

Requisites: ETRE 175, ETRE 175L

**ETRE 265L**

**Laboratory of Principles of Electrical Control and PLC**

**One Credit**

This laboratory course provides students with theoretical concepts and practical skills of different types of existing electric control systems. It discusses the concepts of magnetic systems and automatic controls. The issues are addressed to the operating principles, selection and specifications of the various electrical controls. Using different control components such as: magnetic contactors, timers and counters, programmable logic controllers and others. Apply safety rules and codes.

Co-requisite: ETRE 265

**ICET 210**

**Fundamentals of Instrumentation and Calibration**

**Three Credits**

Five hours of lecture-lab discussion per week. This course provides the student the basic elements of the instrumentation and the calibration. It discusses the concepts of pressure, temperature, level and flow. The topics are directed to the principles of operation, selection and specifications of different instruments. Also, this course applies the principles of industrial instruments calibration such as: valves, sensors and other components.

Requisite: PHSC 120

**MAET 201**

**Fundamentals of Manufacturing**

**Three Credits**

Three hours of lecture per week. This course covers the basic concepts of the manufacture, its areas, processes and applied technologies. Different manufacturing industries will be discussed and different materials and equipment used for development products will be identified.

Requisite: PHSC 120

**METE 220**

**CAD/CAM Technology**

**Four Credits**

Three hours of lecture and one three-hour laboratory per week. Introduction to CAD/CAM. Students generate working drawings of machine parts and/or products. They learn to create 3-D models of mechanical parts using Solid Works surfacing and solid modeling commands.

Requisites: ENGI 161

**METE 222**  
**Properties of Materials**  
**Four Credits**

Three hours of lecture and one three-hour laboratory per week. Covers the basics required for successful design of machine members, parts and connections. Selection of materials according to their strength and function based on testing and design.

Requisite: PHSC 120

**METE 224**  
**Manufacturing Process Technology**  
**Four Credits**

Three hours of lecture and one three-hour laboratory per week. An introduction to manufacturing processes and overview of casting, forming, and metal removal processes. Manufacturing processes of plastics.

Requisite: METE 222

**METE 226**  
**Air Conditioning & Refrigeration Technology**  
**Four Credits**

Three hours of lecture and one three-hour laboratory per week. Refrigeration and air conditioning systems are covered in detail, along with the safe handling of refrigerants. Study of fans, fan laws, duct layout and sizing as they pertain to air conditioning systems. Techniques for designing air conditioning and refrigeration systems for buildings.

Requisite: PHSC 120

**METE 228**  
**Mechanical Measurements Technology**  
**Four Credits**

Three hours of lecture and one three-hour of laboratory per week. The study of measurement technology, coordinate measuring machines, surface finish measurements, machine vision, and particle measurement in a clean environment. The monitoring of processes and operations, automatic control and data analysis.

Requisite: METE 220

**METE 230**  
**Principles of Pneumatic and Hydraulic Systems**  
**Four Credits**

Two hours of lecture and one three-hour of laboratory per week. This course covers the theoretical and practical principles of hydraulics and pneumatics systems. The student acquires the knowledge in the design, installation and repair components such as valves, compressors, actuators regulators and other associates components.

Skills in blueprint reading and squematics related with industrial hydraulics and pneumatics field are developed.

Requisites: PHSC 120, ENGI 101, ENGI 121

**METE 233**  
**Fundamentals of Refrigeration and Air Conditioning**  
**Three Credits**

In this course refrigeration and air conditioning the student will develop the knowledge on the following topics: characteristics of refrigerants, temperature, pressure, tools and equipment, welding, system components, compressors, evaporators, and metering devices. It also studied the burden and evaluation of systems and leak detection. Explore the basic system maintenance. Explains the use and care of oils and additives and troubleshooting of small commercial systems.

Requisite: MATH 121

**METE 233L**  
**Laboratory of Fundamentals of Refrigeration and Air Conditioning**  
**One Credit**

In this laboratory course will apply the theoretical knowledge acquired in the course METE 240, Fundamentals of Refrigeration and Air conditioning. The student will learn techniques for leak detection, evacuation, refrigerant charge and the recovery of refrigeration and air conditioning. The course also includes flowcharts, various thermodynamics appendices, conversion factors, coolant pressure and analysis of heating by pressure. Also the student applies the Thermodynamics Laws in this course.

Requisite: METE 240

**METE 235**  
**Fundamentals of Properties of Materials**  
**Three Credits**

Fundamental principles of structure and properties of materials utilized in practice of technology engineering. Properties of materials are related to atomic, molecular, crystalline structures. Metals, ceramics, multiphase systems, and polymeric materials. Relationships between structure and electrical, mechanical, thermal, chemical properties.

Co-requisite: MATH 151

**METE 235L**  
**Laboratory of Fundamentals of Properties of Materials**  
**One Credit**

In this laboratory course will apply the theoretical knowledge acquired in the course METE 235 Fundamentals of Properties of Materials. The student will have the

opportunity to develop different types of tests to metals, plastics and wood. Be used: microscopes and hardness equipment among others. Also in this course, students apply all safety rules established for Mechanical Engineering Laboratory.

Requisite: METE 235

**METE 245**  
**Fundamentals of Manufacturing Processes Technology**  
**Three Credits**

In this course the students learn the fundamentals to manufacturing processes, including interrelationships between the properties of the material, the manufacturing process and the design of components. Is an overview of casting, forming, and metal removal processes. Also will be used manufacturing processes of plastics and wood. Emphasis on process selection for optimum design.

Requisites: METE 235, METE 235L

**METE 245L**  
**Laboratory of Fundamentals of Manufacturing Processes Technology**  
**One Credit**

In this laboratory course will apply the theoretical knowledge acquired in the course METE-245 Principles of Manufacturing Processes Technology. The student will have the opportunity to acquire technical skills in the development of mechanical components. Be used: lathes, milling machines, drills and other specialized equipment to design industrial parts. The student applies the safety rules and procedures in the laboratory.

Co-requisite: METE 245

**METE 247L**  
**Laboratory of Fundamentals of Welding**  
**One Credit**

In this course the student will acquire knowledge and skills related to the field of welding. We will study the materials, techniques and procedures relating to this matter. The student will have the opportunity to work: oxy-acetylene soldering, shielded metal arc, gas metal and plasma cutting and more. Using all the safety rules that govern this field as well as the procedure used for the management and use of gas.

Requisite: METE 235

**METE 250**  
**Principles of Pneumatic and Hydraulic**  
**Four Credits**

This course covers the theoretical and practical principles of hydraulics and pneumatics systems. The student acquires the knowledge in the design, installation and repair components such as valves, compressors, actuators regulators and other associates components. Skills in blueprint reading and squematics related with industrial hydraulics and pneumatics field are developed. The student applies the safety rules and procedures in the laboratory.

Requisite: MATH 151

**METE 251**  
**Introduction to Industrial Mechanics**  
**Three Credits**

Provide basic mechanical skills and repair techniques common to most fields of industrial maintenance. Includes topics on precision measuring instruments and general safety rules common in industry, including lock-out/tag-out. Hands on course include troubleshooting and overhaul of mechanical systems such as pumps, assembly lines, conveyors, and associated industrial machinery.

Requisite: BIOT 101

**PHSC 120**  
**Technical Science**  
**Three Credits**

Three hours of lecture and one three-hour lab per week. This is a course designed for technicians who require a working knowledge of the basic principles of physics. The course provides students with an introduction to the basic principles and applications of mechanics, the concepts of rotation, simple harmonic motion, properties of materials, fluids, heat and temperature, and electricity.

Co-requisite: MATH 151

**QETE 230**  
**Quality Management Principles**  
**Three Credits**

Three hours of lecture per week. Focuses on the organizational goal of producing a quality product or service. The meaning and benefits of quality, the cost of quality and problem solving tools for continuous improvement. Topics include overview of quality philosophy; principles of quality, commitment to continuous improvement, customer focus and paradigm shift, understanding process variation and employee involvement.

Requisite: MATH 121

**QETE 232**

**Quality Improvement Tools**

**Three Credits**

Three hours of lecture per week. These tools provide the basics for examining processes and systems and making data-based decisions to improve work processes and systems. Covers the 7-step improvement process, includes flow-charting, Pareto charts and cause-effect diagrams.

Requisite: MATH 121

**QETE 234**

**Statistical Process Control and Metrology**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Provides the basic concepts and applications of Statistical Process Control (SPC). The course covers control charts; including setting scales, charting, interpreting, and analyzing process capability. Problem-solving techniques are emphasized and laboratory exercises are linked to the implementation of SPC in the workplace.

Requisite: QETE 230

**QETE 236**

**Process Validation**

**Three Credits**

Three hours of lecture per week. The course covers validation approaches for characterizing processes, process intermediates and final products emphasizing cost effectiveness while determining what levels of validation are required for different phases of development and process improvement. Includes topics such as validation of water systems, cleaning validation, computer systems validation, equipment validation and recent trends in process validation.

Requisite: QETE 230

**QETE 237**

**Industrial Regulations and Validations**

**Four Credits**

Five hours lecture per week. This course cover the study of current Good Manufacturing Practices (CGMP's) and the series of international quality standards known as ISO 9000 through 9004, ISO 10011, 10012, and ISO 14000. The validation for characterizing processes, intermediates process and final products emphasizing effectiveness cost while determining what levels of validation are required for different phases of development and process improvement also are included. Are discussed topics such as validation of water systems, cleaning validation, computer systems validation, equipment validation and recent trends in process validation.

Requisite: QETE 230

**QETE 238**

**GMP and ISO Standards**

**Three Credits**

Three hours of lecture per week. The study of Good Manufacturing Practices (GMPs) and the series of international quality standards known as ISO 9000 through 9004, ISO 10011, 10012, and ISO 14000. Provides an understanding of documentation system for validation of equipment, utilities, analytical methods and processes in a medical manufacturing environment.

Requisite: QETE 230

**QETE 240**

**Quality Management Principles and Improvement Tools**

**Three Credits**

This course focuses on the organizational goal of producing a quality product or service. The meaning and benefits of quality, the cost of quality and problem solving tools for continuous improvement. Topics include overview of quality philosophies; principles of quality, commitment to continuous improvement, customer focus and paradigm shift, understanding process variation and employee involvement. Also, describes the quality tools that provide the basics for examining processes and systems and making data based decisions to improve work processes and systems. Covers the 7-step improvement process, includes flow-charting, Pareto charts and cause and effect diagrams.

Co-requisite: MATH 121

**TCOM 300**

**Introduction to Telecommunications**

**Four Credits**

Three hours of lecture and one three-hour lab per week. Key concepts of telecommunications and networking. The course provides a solid introduction to networking fundamentals including key acronyms, protocols, and components that are essential to understanding how networks operate today. It covers the basic concepts of telecommunications such as analog/digital communications, basic encoding, bandwidth and capacity and serves as a foundation for in-depth study of networking. Upon completion, the participant will have a solid understanding of how information travels from a source computer to a destination computer across a complex network.

Requisite: PHSC 120

**TCOM 320**

**Telecommunication and Data Networks**

**Four Credits**

Three hours of lecture and one three-hour lab per week. This course covers the key concepts of telecommunications

and networking. It provides a solid introduction to networking fundamentals including key acronyms, protocols, and components that are essential to understanding how networks operate today. It covers the basic concepts of telecommunications such as analog/digital communications, basic encoding, bandwidth and capacity and serves as a solid foundation for in-depth study of networking. It identifies the types of communications networks that have evolved based on the various technological configurations and the internetworking process behind data communications. Upon completion, the participant will have a solid understanding of how information travels from a computer to another computer across a network.

Requisites: PHSC 120, ENGI 121

### **TCOM 330**

#### **Network Infrastructure Management**

##### **Four Credits**

Three hours of lecture and one 3- hour lab per week. This course concentrates on the Windows/2000 infrastructure management protocol, which is the largest in use on a global scale. Procedures for planning and servicing network infrastructure. The course covers areas such as protocols, services requiring calculation in the light of the organization needs, packet exchange and sequential packet exchange IPX/SPX, integration with Novell netware, TCP/IP. Netbios, WINS, DHCP and DNS maintenance and configuration issues are covered. Routing, remote access and VPNs are also covered from an infrastructure and management perspective.

Requisite: TCOM 320

### **TDBE 110**

#### **Technical Drawing and Blue Print Reading for Electricians**

##### **Two Credits**

Four hours lecture - lab per week. This course introduces the student to terminology and applications unique levels of the electricity industry. Covered in the basic drawing tools and then acquire skills in the development of views, plans and specifications. In addition they will cover the types of views on a set of construction drawings and clear explanations of their relationships with various electrical installations. It offers a comprehensive and applicable content in the electrical drawing.

# INTERNATIONAL SCHOOL OF DESIGN AND ARCHITECTURE

The International School of Design (ISD) at UT initiated its operation as an administrative unit in 2006. Its first two degrees will be a Bachelor's Degree in Design with a concentration in Industrial Design (BDes) and an Associate Degree in Fashion Design (AFD). The Dean will be the Chief Officer of the School, which has become the seventh academic unit of the institution.

## MISSION

To prepare leaders and professionals in the design field who are competitive, and are focused toward an international academic perception. In addition, they are critical, and multidisciplinary; they are committed to debate, investigation, the cultural content and the technological merits of the designed object and their production technology.

## VISION

The school will be known in Puerto Rico and internationally as a leader in the development of professionals in design with international and multidisciplinary perspectives, and as school which is oriented toward the needs of the contemporary human being.

## GOALS

The proposed program relates to the institutional mission. The Programs goals are:  
Promote ethical and cultural values to enable students to make better use of their judgment, rights, and obligations.  
Establish international collaborations.  
Graduate students who are well prepared in the area of design  
Promote the uses of technology for design and production  
Establish collaborative relationships between the University and the external community by promoting research and industrial relationships

These goals fulfill the institutional mission.

## ASSOCIATE DEGREE IN FASHION DESIGN (AFD)

The Associate degree in Fashion Design will train students to take part as professionals in all aspects of the garment industry, ranging from children's apparel to men's ready-to-wear and including couture. Particular attention will be placed on the history of fashion and its recurring interpretations. Students will be asked to see fashion and its recurring interpretations as a reflection and as a component in a continuum that includes ethical practice, manufacturing, marketing, promotion, accessorizing, and disposal. Students will not only be instructed in the areas of fashion concept development, but in the business aspects of the rapidly growing clothing industry. Students may also focus on make-up and costume design for theater, television and film.

The program has several distinct areas of focus:

- General education component
- Core curriculum in design
- Business courses
- Practical experiences in different settings
- Concentration courses
- Close student-faculty interaction, and academic counseling
- Distinguished faculty which has experience as practitioners in the field

## GENERAL OBJECTIVES OF ASSOCIATE DEGREE IN FASHION DESIGN PROGRAM

The goals of the Associate Degree in Fashion Design are:

- To provide students with the knowledge to develop their skills and contribute to our society.
- To capacitate designers for a variety of settings.

## SPECIFIC OBJECTIVES OF ASSOCIATE DEGREE IN FASHION DESIGN PROGRAM

To develop designers capable of designing innovative garments.

To fulfill the needs of local industry.

To provide designers capable of developing their own businesses and are sensitive to ethical and integrity issues.

## ASSOCIATE DEGREE IN FASHION DESIGN ADMISSION REQUIREMENTS

Students interested in applying for admission to the Associate Degree in Fashion Design will be considered if they fulfill the following criteria:

High school transcripts of credits with the application for admission.

Grade point average of at least 2.0 on a 4.0 scale (30%).

College Entrance Examination Board (15%).

An interview and drawing homework with the Admission Committee (30%). (See attachments No. 2 and No. 3)

Portfolio (25%).

Student must submit a \$15.00 nonrefundable application fee.

Students must comply with any other requirements as established in the catalog by the UT Academic School.

**ADMISSION REQUIREMENTS FOR TRANSFER STUDENTS**

Students who have begun studies at other institutions need to complete the following requirements:

Have good academic standing at the previous institution where studies were initiated. Not subjected to any academic or disciplinary sanctions.

Official credit transcript must be submitted with admission application.

Have at least twelve transferable semester credits with a minimum grade of C from another accredited institution.

Fulfill all general admission criteria as stated above.

**GRADUATION REQUIREMENTS FOR ASSOCIATE DEGREE IN FASHION DESIGN**

Students of the Associate Degree in Fashion Design at Universidad del Turabo will be eligible to receive their degree after meeting the following requirements:

Completion of all courses required for the degree.

Completion of the number of credit hours required for the degree with a minimum Grade Point Average of 2.0. Students should obtain a grade of C or more in core and major courses. Students must comply with the retention standards established at the Institution.

Completion and approval of a Portfolio.

All students who enter Universidad del Turabo will be subject to the graduation requirements in force during the year they are admitted. Nevertheless, if the curriculum is modified, the student must graduate under the new curriculum as it is applied to their study program by the department.

Students must apply for graduation at the Registrar’s office during the period established in the Academic Calendar. Students must also settle any debts with the Institution. No document certifying graduation will be given until documentation has been presented certifying that there are no outstanding debts.

Commencement exercises will be held once a year, at the end of the second academic semester. Students who meet graduation requirements at the end of any term or a

summer session may apply to the Registrar’s office for a certification to that effect.

**ASSOCIATE DEGREE IN FASHION DESIGN ALUMNI PROFILE**

Graduates from the Associate Degree in Fashion Design will: Apply the ethical principles that rule the profession.

Have the competence to select and create the appropriate design for the clients’ needs.

Have the knowledge to develop their own business.

Have sensibility for ethnological diversities and needs.

**ASSOCIATE DEGREE IN FASHION DESIGN CURRICULUM**

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>15</b>
<b>Core Courses</b>	<b>45</b>

<b>General Education Courses</b>	<b>(15 credits)</b>	
SPAN 152	Writing Fundamentals	3
ENGL 152	Oral Communication: Speaking	3
MATH 120	Elementary Algebra	3
HIDE 105	Fashion History	3
FSDE 100	Freshman Seminar	3

<b>Core Courses</b>	<b>(45 credits)</b>	
DESI 121	Drawing I	3
FADE 100	Basic Sewing	3
FADE 125	Representing the Body	3
FADE 131	Fashion Concept Development I	3
FADE 132	Fashion Concept Development II	3
FADE 140	Fashion Drawing	3
FADE 150	Studio Methods and Structures	3
FADE 200	Patternmaking	3
FADE 210	Construction Techniques I	3
FADE 215	Digital Fashion Design	3
FADE 240	Portfolio Studio	3
FADE 255	Core Studio: Concepts and Realization I	3
FADE 256	Core Studio: Concepts and Realization II	6
FADE 270	Internship	3

### ASSOCIATE DEGREE IN WEBDESIGN

The goal is to become a Web Designer, an expert qualified to deal with the Internet's continuous string of advances, who has the training and skills to define, create, and design them. A web designer configures telecommunications systems to ease people's access to content and audiovisual information.

ISD Web Design program graduates are qualified to work as:

- Web Designer
- Web Art Director
- Web Creative Director
- Multimedia Designer
- Web Specialist
- Web Information Architect

### ASSOCIATE DEGREE IN WEB DESIGN CURRICULUM

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>21</b>
<b>Core Courses</b>	<b>6</b>
<b>Concentration Courses</b>	<b>33</b>

<b>General Education Courses</b>	<b>(21 credits)</b>	
SPAN 152	Writing Fundamentals	3
ENGL 152	Oral Communication: Speaking	3
MATH 120	Elementary Algebra	3
INSC 101	Integrated Sciences I	3
HUMA 111	Civilization and Universal Culture I	3
HIDE 100	History of Art	3
FSDE 100	Freshmen Seminar	3

<b>Required Courses</b>	<b>(6 credits)</b>	
DESI 121	Drawing I	3
INNO 300	Sustainable Innovation	3

<b>Major Courses</b>	<b>(33 credits)</b>	
WEDE 100	Web Design and Graphics Studio 1	3
WEDE 200	Web Design and Graphics Studio 2	3
WEDE 250	Web Design and Graphics Studio 3	3
WEDE 260	Web Design and Graphics Studio 4	3
WEDE 270	Internship	3
WEDE 280	Portfolio Studio	3
GRAD 145	Communication Studio	3
GRAD 310	Graphic Design Studio III	6
CTEC 210	Operating Systems, Installation and Configuration	3
CTEC 340	Programming for the Web	3

### ASSOCIATE DEGREE IN ARCHITECTURAL DRAFTING

With the Architectural Drafting degree, the student will be trained to manage architectural, mechanical, electrical, civil, structural and products technical drawings. In addition, the student will be prepared to be tested by the Puerto Rico Drafting Accreditation Board. Graduates of our program in Architectural Drafting will be qualified to prepare paper and digital drawings, as well as plans, in 2D and 3D, using CAD software from a sketch.

Graduates will be qualified to work as:

- Architectural Drafter
- Surveyor Drafter
- Engineer Drafter
- Industrial Design Drafter
- 3D Modeler
- 2D and 3D Render

### ASSOCIATE DEGREE IN ARCHITECTURAL DRAFTING CURRICULUM

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>15</b>
<b>Core Courses</b>	<b>45</b>

<b>General Education Courses</b>	<b>(15 credits)</b>	
SPAN 152	Writing Fundamentals	3
ENGL 152	Oral Communication: Speaking	3
MATH 120	Elementary Algebra	3
HIDE 100	History of Art	3
FSDE 100	Freshmen Seminar	3

<b>Core Courses</b>	<b>(45 credits)</b>	
ADID 111	Technical Drawing I	6
ADID 121	Computer Aided Drawing I	3
ADID 122	Technical Drawing II	6
ADID 231	Computer Aided Drawing II	3
ADID 232	Technical Drawing III	6
ADID 223	Methods and Construction Materials	3
ADID 240	Mechanical Drawing	3
ADID 241	Computer Aided Drawing III	3
ADID 242	Technical Drawing IV	3
ADID 250	Portfolio Studio	3
ADID 270	Internship	3
DESI 121	Drawing I	3

## COURSE DESCRIPTIONS

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

### ADID 111

#### Technical Drawing I

##### Six Credits

This course introduces to the student to the profession of architectonic drafting, the basic principles of drawings, laws and regulations. It includes the identification and use of the drawing instruments, alphabet of letters, lines, measurement and scales, applied geometry, orthographic projections, sectionals, isometric views oblique, perspective, auxiliary views, sketch by hand raised and sizing. The works will be carried out on drawing table.

Requisite: Admission to the School

### ADID 121

#### Computer Aided Drawing I

##### Three Credits

This is an introductory course in the use of AutoCAD computer-aided-drafting software. Students will learn the advantages and disadvantages of using computer graphics, as well as fundamental capabilities of AutoCAD such as how to draw and edit entities (lines, circles, arcs, etc.). In addition the students will learn more advanced concepts such as how to work with layers and how to write text and dimension drawings. The course concludes with a final project that consists of drawing the floor plan, sections, and elevations of a two-bedroom residence.

Requisite: Admission to the School

### ADID 122

#### Technical Drawing II

##### Six Credits

This course is a continuation of ADID 111 and emphasizes the elements of architectural sketch such as learning how to draw floor plans, dimensions, elevations (facades) and architectural sections. The symbols and nomenclature used in detail. The details in the kitchens drawings, bathrooms, bedrooms and dining room will also be discussed. Includes a site and location, plans and other field elements will be examine.

Requisites: ADID 111, DRAF 111, DRAF 011

### ADID 223

#### Methods and Construction Materials

##### Three Credits

This course introduces students to the basic principles of the methods and materials used in construction, including the final estimated cost of work. Learn about the different government agencies and private associations which governed the construction. Learn about the different types

of materials used to produce the various works, emphasizing the concrete and steel which are very common. This range of information provided will give the student the opportunity to be a versatile draftsman and used in its plane the different ideas of professionals with whom he interacts.

Requisites: ADID 122; DRAF 122, DRAF 022;

### ADID 231

#### Computer Aided Drawing II

##### Three Credits

This course addresses the advanced AutoCAD technique of creating symbol libraries and working with isometric drawings. The emphasis of the course is in preparing civil (structural), mechanical (plumbing) and electrical drawings. Students will prepare their own symbol libraries to represent valves, pump, electrical outlets, etc. In addition, students will learn how to use the symbol libraries already created for AutoCAD. The course concludes with a final project which consists of drawing the structural, plumbing, and electrical drawings of two bedroom residence. The residence is the same for which the architectural drawings were prepared in course DRAF121 AutoCAD I.

Requisites: ADID 121, DRAF 121, DRAF 021;

### ADID 232

#### Technical Drawing III

##### Six Credits

This course examines the particular requirements to create civil (structural), mechanical (plumbing and HVAC), and electrical drawings. The emphasis is on familiarizing the students with the nomenclature and organization of the drawings. Fundamental principles for each of the subjects will be briefly presented as background. The course concentrates on examining and analyzing several construction drawings donated to engineering professor Juan C. Morales for educational purposes. The students will practice the concepts learned in class during the laboratory session. The laboratory session will include both drafting with instruments and drafting with the computer using AutoCAD.

Requisites: ADID 122; DRAF 122, DRAF 022

### ADID 240

#### Mechanical Drawing

##### Three Credits

Introduces students to the fundamentals of mechanical and industrial design through study and analysis of the physical description of the objects. This course includes topics such as: assembly drawing, welding drawing, structural delineation, industrial pipe drawing, flat air conditioning ducts and introduction to the civil drawing (typography).

Using the table and drawing instruments the student develops manipulative skills required in the plans.

Requisites: ADID 111

**ADID 241**  
**Computer Aided Drawing III**  
**Three Credits**

This course addresses the advanced AutoCAD technique of creating symbol libraries and working with isometric drawings. The emphasis of the course is in preparing civil (structural), mechanical (plumbing) and electrical outlets, etc. In addition, students will learn how to use the symbol libraries already created for AutoCAD. The course concludes with a final project which consists of drawing the structural, plumbing, and electrical drawings of a two bedroom residence. The residence is the same for which the architectural drawings were prepared in course DRAF 231 AutoCAD II.

Requisite: ADID 231

**ADID 242**  
**Technical Drawing IV**  
**Three Credits**

This course prepare the student in the facet of foundations, situations plan and localization, topographic maps reading and additional topics on surveying like transversal, and card calculation. All work is done in a drawing table. The class concludes with a final project where the student draws the localization of a residential in a level according to the zonification zones.

Requisites: ADID 232; DRAF 232

**ADID 250**  
**Portfolio Studio**  
**Three Credits**

This studio will focus on the preparation and refinement of a portfolio that encompasses the student's work within the program and any other distinguishing activity. The goal will be the production of a refined, multifaceted presentation of the student goals and creative vision and his or her ability to engage in professional practice.

Requisite: DRAF 231

Co-requisites: ADID 241; DRAF 241

**ADID 270**  
**Internship**  
**Three Credits**

All students will be required to take part in a professional internship that employs a wide range of skills and knowledge developed in this degree program. Each student will work with a department advisor to fully realize the potential of this experience in an Architectural Drafting

industry or giving professional services to an industry in drawing realization.

Requisite: ADID 231

Co-requisites: ADID 241; DRAF 241

**ANDE 100**  
**Design Studio I- 2D and 3D Animation (Analog)**  
**Three Credits**

This course covers the fundamentals of animation and explores handmade animation techniques and processes. Also, in this course will focused in understanding the relationship of bones and muscles at relax and in movement to be able to translate this to creating and maintaining correct volumes in anatomy drawing. Studying human, species and animal movement through sequential drawings, faces, gesture and poses drawing. Also in this course will show the technique called Stop-Motion. The students will create characters from different materials and manipulate them frame-by-frame to bring them to life. In this class the student will be asked to develop two dimensional characters that are both personally and culturally resonant and imaginative. Particular emphasis will be placed on the expressive power of abstract forms and color. Research, thorough craftsmanship, and strong sophisticated designing will be stressed.

Requisite: Admission to the school

**ANDE 150**  
**Design Studio II – 2D Animation (Computer)**  
**Three Credits**

This course introduces the student to the creative experience while they learn the potential of this very dynamic form of expression in a computer based medium. Through studio projects, students will be introduced to the basic principles of 2D animation, including timing, movement for animation, and basic editing. The class focuses on process rather than the finished product. Individuality and experimentation will be emphasized. Class exercises will be filmed with digital video cameras, computer edited, and output to DVD.

Requisite: ANDE 100

**CTEC 200**  
**Computers and Peripherals**  
**Four Credits**

This course covers all components and ancillary systems comprising a PC. It provides an introduction to every component and analyses its functionalities and weaknesses. It analyses the role of each component in supporting an application and the user functional goal. It presents the PC as a package of matched components and dissects all of its

internals individually and integrally. Some of the components covered are the CPU, RAM, Display apparatus, ROM, Fixed Disk, USB, Network Adapter, CD-ROM, CDR's, DVD's, Floppy disk, Serial and Parallel ports, Mouse, Keyboard and others. It also covers the most critical peripherals such as, Printers, Scanners, Digital Imagery equipment, Modems and others.

Requisite: ENGI 121

### **CTEC 210**

#### **Operating Systems, Installation and Configuration**

##### **Three Credits**

This course covers all software components comprising a PC. It provides an introduction to every component and analyses its functionalities and weaknesses. It analyses the role of each component in supporting an application and the user functional goal. It presents the PC as a package of matched components and dissects all of its internals individually and integrally. Some of the software components covered are: the operating system and its sub-components, data communications software components, DOS components, peripheral administration components, Windows Systems architecture, disk operating software, essential user applications, memory management software, and software upgrades management. The course covers in detail the diagnosis, procedures and resolution of software problems. It also deals with the Virus problem and the most effective software solutions. Finally, it covers Networking from a software perspective.

Requisite: WEDE 200

### **CTEC 340**

#### **Programming for the Web**

##### **Three Credits**

This course provides the student with a basic understanding and skills to program for Web Sites. It covers the basics of Data Base manipulation techniques using MySQL and PERL. It covers matters such as configuration for DBA systems on the Web, Perl scripts, performance, and error handling. Finally, the students are presented with a live example of a simple Web Based DBA control application. The course then focuses on one of today's most important development in suite/environment, the Macromedia Dreamweaver/Flash environment. It covers the complete development cycle using these tools, from plan to publishing and maintenance. Matters such as DreamWeaver graphics, formatting for the Web, style sheets, cascading sheets, dimensional tables, forms, frames, templates, layers, animation and others are covered. It also covers Fireworks image and text manipulations, working with objects, effects, creating buttons, backgrounds, hotspots, sliced images, rollovers, integrating Fireworks images with HTML applications and finally, auditing and publishing a WebSite and post-publishing practices.

Requisite: WEDE 200

### **FSDE 100**

#### **Freshman Seminar**

##### **Three Credits**

This course will provide students with activities, techniques and academic experiences in terms of design discipline. Students will be able to identify and develop personal and academic skills to improve their performance.

Requisite: Admission to the School

### **DESI 121**

#### **Drawing I**

##### **Three Credits**

In this studio course students will be introduced to the basic drawing skill required for the representation of objects, figures and spaces. The importance of sketching as a means of recording and demonstrating concepts and processes will be emphasized. Black and white media, in particular pencil, pen and marker, will be emphasized. The development of fundamental drawing skills will be stressed and standard manual product illustration skills will be introduced.

Requisite: Admission to the School

### **DESI 255**

#### **Core Studio: Concept Development and Realization I**

##### **Four Credits**

This is a core studio in this program. Students continue to develop their awareness of specific markets within fashion and increase their ability to target their individual styles to a specific market segment. Students create portfolios of original design lines within the categories of the couture and high-priced industry. They apply knowledge of the couture to design, drape, fit, and construct a mini collection for a particular target market. They develop styles and images through fabric sourcing, market research, and inspirational research. Emphasis is placed on continuity of style within design, presentation and trend analysis through the study of collections showing in London, Milan, Paris and New York. Students learn the principles of draping as a method of designing original garments in three-dimensional forms. Draping techniques and construction skills are developed for more advanced structured garments, along with an understanding of silhouette, proportion and current style trends. Students work on developing their strengths in design to ensure establishment of a defined and strong personal design philosophy.

This course expects innovative design solutions from the students that reach beyond popular forecasts. Personal interpretation and risk-taking are emphasized. The collection designed in this course will be basis for production in Construction Techniques I.

**DESI 256**

**Core Studio: Concept Development and Realization II  
Four Credits**

This is a core studio in this program. It is an introduction to swimwear and intimate apparel design. Students gain a broad working knowledge of swimsuits, intimate apparel and related apparel, such as cover-ups and beach accessories. Original designs are produced using flat pattern and draping techniques and industry specific construction methods and machinery. In this studio students will develop a collection of their own choosing. They will undertake research and develop a concept that they feel expresses their vision and strengths as a designer. These ideas will be applied in the development of a collection of a dozen looks. Working with specialized crafts studios will be stressed when appropriate. The collection designed in this course will be the basis for production in Construction Techniques II.

Requisite: DESI 255

**FADE 100**

**Basic Sewing  
Three Credits**

This course is designed to help the student become familiar with the basics of machine sewing, get confident handling a machine, and develop a range of related skills, like looking at different needles suitable for fabric types, practicing standard stitches, seaming straight, curved and gathered edges, learning most common seam types (as French seams and flat fell seams), etc.

**FADE 125**

**Representing the Body  
Three Credits**

This course focuses on the human form. Understanding human anatomy will be the point of departure for exercises that employ various media to represent the body in action and repose. In addition to developing research skills, students will focus on documenting the body through digital photography, drawing, collage and digital rendering, using Adobe Illustrator and various fashion Computer Aided Design programs.

Requisite: Admission to the School

**FADE 131**

**Fashion Concept Development I  
Three Credits**

This is a core studio in this program. Each student's primary goal is the development of new fashion concepts. In the first semester students will use their local environment as the site from which ideas will be culled. These ideas will be applied in the development of a collection of a dozen looks. Women's wear will be stressed. Clothing designed in this

course will be basis for clothing production undertaken in the second semester's Studio Methods and Structures. This course will focus on the economies and production standards of the prêt-à-porter industry.

Requisite: Admission to the School

**FADE 132**

**Fashion Concept Development II  
Three Credits**

This is a core studio in this program. Each student's primary goal is the development of new fashion concepts. In the second semester, the research focus of this course will be on global trends in the sportswear and active wear industries and their niche markets. These ideas will be applied in the development of a collection of a dozen looks. Men's wear and children's apparel will be stressed. The collection designed in this course will be basis for production in Studio Methods and Structures. This course will focus on the economics and production standards of the prêt-à-porter industry.

Requisite: FADE 131

**FADE 140**

**Fashion Drawing  
Three Credits**

In this studio students will continue to build upon skills developed in Representing the Body and will employ those skills in special assignments related to the development and production of a collection of poses and bodies. Textiles illustration will be addressed. The primary work of this class will be drawing from the live clothed model to develop industry-standard fashion illustration skills. The maintenance of a sketchbook and the production of sketch drawing will be stressed.

Requisite: FADE 125

**FADE 150**

**Studio Methods & Structures  
Three Credits**

The basis of work in this course will be traditional tailoring techniques, from draping to the technology of using various materials. The creation of forms that interact with the human body will be explored.. Experimental approaches suggested by students' designs produced in Fashion Concept Development I will also be explored. This course is a hands-on clothing construction studio. Sewing skills will be stressed and patternmaking skills will be introduced.

Requisite: FADE 132

**FADE 200**

**Patternmaking**

**Three Credits**

Traditional patternmaking skills will be the focus of this course. The instructor will take students through a series of exercises that develop these skills. Primary focus will be placed on the development of patterns for designs created by the students as part of program coursework.

Requisite: FADE 132

**FADE 210**

**Construction Techniques I**

**Three Credits**

The work of this course will be linked to designs developed in Core Studio Concept Development and Realization I. Students will continue to develop their sewing, patternmaking and construction skills with a particular focus on collaboration with other technicians and craftspeople. This course will introduce the students to the sewing techniques practiced in the finest haute couture ateliers around the world and provide the basis for understanding couture. Students will learn couture techniques in cutting, hand stitching, seam and hem finishes, pocket construction, pressing, and finishing.

Requisite: FADE 132

**FADE 215**

**Digital Fashion Design**

**Three Credits**

This course will focus on the range of digital technologies used in the fashion industry. With a primary focus on Computer-Aided-Design software, students will learn flat pattern drafting, and fashion illustration technologies that will enhance the accuracy of their construction skill and increase their ability to visualize color and other potential variations in their designs.

Requisite: FADE 131

**FADE 220**

**Introduction to Costume Design**

**Three Credits**

In this studio the students will be introduced to the costume design world of the theater, film and television. The course includes a historical analysis of clothing and textiles, a research phase and an evaluation phase, leading the student to the design of the graphic project. This design is supported by the practical portion of the course, the laboratory. In addition to historical costumes, other costumes will be created according to the student's inclinations, through the personal interpretation of various themes. Encounters with experts from the field of theater, film and television are also included in this course.

Requisite: FADE 132

**FADE 240**

**Portfolio Studio**

**Three Credits**

This studio will focus on the preparation and refinement of a portfolio that encompasses the student's work in the program and any other distinguishing activity. The goal will be the production of a refined, multifaceted presentation of the student's goals and creative vision, and his or her ability to engage in professional practice.

Requisite: FADE 255

**FADE 255**

**Core Studio: Concepts and Realization I**

**Three Credits**

This studio is a core studio in this program. Students continue to develop their awareness of specific markets within fashion and increase their ability to target their individual styles to a specific market segment. Create portfolios of original design lines within the categories of the couture and high-priced industry. Apply knowledge of the couture to design, drape, fit, and construct a mini collection for a particular target market. Develop styles and images through fabric sourcing, market research, and inspirational research. Emphasis is placed on continuity of style within design, presentation and trend analysis through the study of collections showing in London, Milan, Paris and New York. Students learn the principles of draping as a method of designing original garments in three dimensional forms. Draping techniques and construction skills are developed for more advanced structured garments along with an understanding of silhouette, proportion and current style trends. Students work on developing their strengths in design to ensure establishment of a defined and strong personal design philosophy. This course expected innovative design solutions from the students that reach beyond popular forecasts. Personal interpretation and risk-taking are emphasized. The collection designed in this course will be basis for production in Construction Techniques I.

Requisite: FADE 132

**FADE 256**

**Core Studio: Concepts and Realization II**

**Six Credits**

This studio is a core studio in this program. An introduction to swimwear and intimate apparel design. Students gain a broad working knowledge of swimsuits, intimate apparel and related apparel such as cover-ups and beach accessories. Original designs are produced using flat pattern and draping techniques and industry specific construction methods and machinery. In this studio students will develop

a collection of their own choosing. They will undertake research and develop a concept that they feel expresses their vision and strengths as a designer. These ideas will be applied in the development of a collection of a dozen looks. Working with specialized crafts studios will be stressed when appropriate. The collection designed in this course will be basis for production in Construction Techniques II.

Requisite: FADE 255

**FADE 260**  
**Concept Presentation**  
**Two Credits**

Presentation is essential to understanding and marketing fashion. In this course students will address the marketing of their designs. They will develop branding for themselves as unique designers that will include marketing strategies and the production of a runway show. This show will be a by-invitation event designed to introduce the designer to the general public.

Requisite: FADE 132

**FADE 270**  
**Internship**  
**Three Credits**

All students will be required to take part in a professional internship that employs a wide range of skills and knowledge developed in this degree program. Each student will work with a department advisor to fully realize the potential of this experience in a fashion design industry or by giving professional services to an industry in fashion realization.

Requisite: FADE 132

**GRAD 145**  
**Communication Studio**  
**Three Credits**

This course introduces information design and live presentation skills to designers. Desktop publishing and graphic design skills employed in the development of documents and presentation materials ranging from business cards and announcements to booklets, research documents, concept presentations and exhibition materials will be focused upon. In addition, significant attention will be paid to students live presentation skills. These presentations will be coached, scripted, videotaped and critiqued. For this course Apple computers and video recording studio are required.

**GRAD 201**  
**Graphic Communication Media**  
**Three Credits**

This is an introductory course on the fundamentals and concepts of the media of graphic communication. Students

study the different graphic communication media, such as digital video for multimedia work, graphic design and typography, effective communication for printing, design and composition of pages, and illustrations, as well as the fundamentals of design. Students must stay current and study the aspects and new developments in the publishing industry. They also analyze technological development and its relationship with traditional operations and with emerging demands in methods and creations of design, management, programming and distribution.

Requisite: Admission to the School

**GRAD 310**  
**Graphic Design Studio 3**  
**Six Credits**

In this course the student will obtain knowledge in the area of interface design. Beginning with the creation of a non-linear conceptualization in the graphic design area, students will work with the principles of dynamism and interaction in the design. Students start to work with the design of buttons, menus, bars, links and graphics in movements applying the basic knowledge of design to a multimedia project.

Requisite: WEDE 200

**HIDE 100 @**  
**History of Art**  
**Three Credits**

This course surveys the history of the representation of the human body as a record of the social, technological, environmental and political circumstances of a period. The goal of this course is to establish an understanding among young designers of art as an expression of the desires, aspirations, needs, esthetics, and available resources of subjects/users throughout history. From earliest representations of humans through current film and digital media that envision the future, human beings and their representations of environment will be examined.

Requisite: Admission to the School

**HIDE 105 @**  
**Fashion History**  
**Three Credits**

This seminar course traces the development of fashion and body adornment in Asia, Africa, Europe, Greece and the Roman Empire through the establishment of Paris, Milan, New York and Latin America as distinct fashion capitals, as well as the establishment of independent fashion centers across the globe. Economic, political, technological, environmental and cultural history will be discussed in relation to the evolution of fashion.

Requisite: Admission to the School

**INDI 316**

**Business Practice**

**Three Credits**

This course will focus on business practices that impact design industries. Topics to be covered will include: team practices, organizational structures, market size, penetration and shares, competitive analysis, product lineup, licensing, copyrights, patents, intellectual property, pricing and branding. Students will also be introduced the process of plan development, as well as to the uses and implementation of business plans.

**WEDE 100**

**Web Design and Graphics Studio 1**

**Three Credits**

This course covers issues such as computers versus software, as well as performance issues. Types of connections to the Internet are discussed in detail. Safety, security troubleshooting, composing effective mail, net-etiquette, organizing information, introduction to e-commerce, customizing tools, chat and online synchronous communications, forums, and blogs. Finally, it covers basic design publishing language, HTML and XHTML and introduces Web design and publishing concepts.

Requisite: Admission to the School

**WEDE 200**

**Web Design and Graphics Studio 2**

**Three Credits**

This course focuses on the principles of Web usability, client purpose and needs as the key element in successful Web Design. Simplicity of design is introduced as a practical Web Design principle. Some of the topics covered are: age loading time, graphic design for the Internet, writing for the Web, document size and readability, fonts for the Web, color schemes and visual impact, and .site architecture vs. content Students will also be introduced to some software tools and effective web site navigation strategies.

Requisite: WEDE 100

**WEDE 250**

**Web Design and Graphics Studio 3**

**Three Credits**

The student begins the course learning the fundamentals of digital imaging, and audio combined with Web technologies. The course will also introduce the student to interactive media authoring and video technology. Students will learn programming and scripting techniques using Flash, JavaScript and ActionScrip for design, animation, and data handling. They will study 2D and 3D animation using computer modeling and an animation software program as the primary tool. This course will emphasize the creation of

animated sequences and GIF animation for multimedia applications.

Requisite: WEDE 200

**WEDE 260**

**Web Design and Graphics Studio 4**

**Three Credits**

This course will teach the student through the methods used in dynamic websites' integration. Will create content types and management, social media and mobile applications.

Requisite: WEDE 250

**WEDE 270**

**Internship**

**Three Credits**

All students will be required to take part in a professional internship that employs a wide range of skills and knowledge developed in this degree program. Each student will work with a program advisor to fully realize the potential of this experience in a web design industry.

Requisite: WEDE 250

**WEDE 280**

**Portfolio Studio**

**Three Credits**

This studio will focus on the preparation and refinement of a portfolio that encompasses the student's work with in the program and any other distinguishing activity. The goal will be the production of a refined, multifaceted presentation of the student goals and creative vision and his or her ability to engage in professional practice.

Requisite: WEDE 250

# SCHOOL OF HEALTH SCIENCES

## VISION

To be the first choice as a School of Health Sciences in Puerto Rico offering innovative opportunities for a formation of excellence.

## MISSION

To prepare excellent human resources in the Health Sciences with innovative academic offerings across the curriculum which can respond properly and rapidly to the needs of local and global communities.

## OBJECTIVES

Our main objectives are:

1. To respond to the needs of health professionals in our catchment area.
2. To establish a continuous improvement system in our programs to ensure their relevance and applicability to our society.
3. To develop health professionals capable of working in Puerto Rico, as well as in other Spanish-speaking and English-speaking communities.
4. To contribute significantly to the development of students with high humanistic values.
5. To establish academic offerings with the participation of customers, students, health services providers, and accreditation agencies to ensure an effective professional practice that responds to the needs of the community.
6. To effectively implement technology integration in all of our programs.
7. To maximize the relevance of our academic offerings utilizing innovative strategies that will facilitate the transfer of knowledge to the practice of health professions and promote the acquisition of an integrated body of knowledge to be used in solving problems.
8. To establish local and international strategic alliances with health care institutions that can provide practice settings for faculty development and for exchange of resources in the areas of teaching and research.
9. To establish local and international alliances with other universities to increase our students' opportunities to participate in exchange programs that will broaden their vision of the health professional role.

10. To develop basic and applied research projects in the area of health, geared to the improvement of the quality of life in Puerto Rico and other communities.

## GOALS

1. Respond to the health needs of our communities within a global perspective.
2. Provide an educational setting with balanced efforts among academic offerings, clinical services, and research endeavors.
3. Establish a system of continuous improvement in our programs to ensure their relevance and applicability.
4. Develop highly trained health professionals prepared to serve individuals and groups from diverse cultural, social and economic backgrounds.
5. Develop health professionals with high humanistic values.
6. Integrate technology in all of our administrative, academic, research and clinical activities.
7. Facilitate transference of scientific knowledge to the practice of the health professions.
8. Establish national and international alliances for faculty development, exchange of resources, and student exchange programs.
9. Foster a high degree of professionalism as health care providers within an interdisciplinary perspective.
10. Establish innovative programs prepared with the collaboration of community stakeholders, students, patients and accreditation agencies.
11. Promote an evidence-based practice setting.
12. Utilize service learning as the primary educational methodology for all academic programs.

## STAFF

**Ángel L. Rivera** / Dean

**Nilda I. Boria** / Associate Dean for Administrative Affairs

**María E. Rosa** / Director, Nursing Department

**Nydia V. Bou** / Director, Health Professions Department

**Milva Vega** / Director, Naturopathic Medicine Doctoral Program

**Carmen Santiago** / Nursing Clinical Coordinator

**Nelly González** / Student Services Officer

**Joannie Ortiz** / Administrative Affairs Director

**TECHNICAL STAFF**

**Ana D. Serrano** /Administrative Affairs Coordinator

**Maribel Lebrón Bonilla** / Nursing Laboratory Technician  
BSN Metropolitan University, Puerto Rico

**Angeliz Pérez** / Academic Affairs Coordinator

**FACULTY**

**PROGRAM OF STUDY**

**Myrelis Aponte** / Assistant Professor  
PsyD, Ponce School of Medicine

**ASSOCIATE DEGREE IN VETERINARY TECHNICIAN**

**Edwin Bossolo** / Lecturer  
MD, Universidad Central del Este, Dominican Republic

**Piyali Battacharya** / Assistant Professor  
PhD, Jadavpur University of Calcutta, India

<b>Total Credits</b>	<b>60</b>
<b>General Education Courses</b>	<b>12</b>
<b>Core Courses</b>	<b>11</b>
<b>Concentration Courses</b>	<b>37</b>

**Nydia V. Bou** / Professor  
EdD, SLP Interamerican University  
MS-SLP-CCC UPR Medical Sciences Campus

<b>General Education Courses (12 credits)</b>	
FSHS 105	Freshman Seminar 3
BIOL 103	Survey of Biological sciences 3
ENGL 152	Fundamentals of Reading and Writing 3
SPAN 152	Fundamentals of Reading and Writing 3

**Marta E. Colón-Rosado** / Lecturer  
MSN, University of Puerto Rico

<b>Core Courses (11 credits)</b>	
BIOL 300	Microbiology Health Sciences 3
BIOL 300L	Microbiology Lab 1
PSYC 123	Survey Course in Psychology 3
CHEM 101	Applied Chemistry 3
CHEM 101L	Applied Chemistry Lab 1

**Gianna E. Crisson-Cancel** / Instructor  
MSLP-CCC, University of Puerto Rico  
MS-SLP-CCC UPR Medical Sciences Campus

<b>Concentration Courses (37 credits)</b>	
AVET 110	Introduction to Veterinary Sciences 3
AVET 101	Veterinary Math 3
AVET 120	Anatomy and Physiology of Domestic Animals 4
AVET 130	Introduction to Nursing Veterinary 3
AVET 220	Common Diseases in Domestic Animals 3
AVET 230	Techniques and Protocols of Veterinary Technology I 3
AVET 231	Techniques and Protocols of Veterinary Technology II 3
AVET 240	Animal Pharmacology and Toxicology 3
AVET 250	Grooming and Veterinary Psychology 3
AVET 260	Management, Practice and Farm Animal Disease 3
AVET 280	Clinical Practice I 3
AVET 281	Clinical Practice II 3

**Luz P. García** / Instructor  
MSLP-CCC, University of Puerto Rico

**Maribel González** / Instructor  
MSLP-CCC, University of Colorado

**Dora Mendoza** / Associate Professor  
MSN, University of Puerto Rico

**Carmen L. Martínez** / Instructor  
MSN, University of Puerto Rico

**Rafaela Ortiz Piñero** / Lecturer  
MSN, University of Puerto Rico

**Vilma E. Reyes** / Instructor  
MS-SLP-CCC UPR Medical Sciences Campus  
Lillian Pintado / Assistant Professor  
AuD-CCC-A Salus University

**María E. Rosa** / Professor  
PhD, DrPH, University of California at Los Angeles

**Iraida Vega** / Instructor  
MPH, University of Puerto Rico

## COURSE DESCRIPTIONS

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

### AVET 101

#### Veterinary Math

##### Three Credits

Review of basic math concepts that are carried out daily in the practice of the profession. Discuss the concept of ratio and proportion, estimation and significant figures, as well as the method for augmentation and reduction formulas, preparations and expressed the percent dilution and concentration. Emphasis in the International System of Units, the English System and equivalents that are used to convert between them. Basic mathematical operations are performed and their application to quantitative problem solving as part of professional roles for the veterinary technician.

Co-req.: AVET 120, AVET 130

### AVET 110

#### Introduction to Veterinary Sciences

##### Three Credits

This course describes the roles and responsibilities of the veterinary technician and studies alternatives, labor and professional organizations. Includes safety rules, ethics and laws that apply to the exercise of their profession and the welfare of animals in Puerto Rico. This course also describes medical terms and economics concepts for the veterinary hospital and veterinary clinics. It identifies the main breeds of domestic animals and defines the concepts of behavior, restraint, and security. It also shows the basic techniques of assessment, physical examination, sampling and vaccination protocols.

### AVET 120

#### Anatomy and Physiology of Domestic Animals

##### Four Credits

Histological, anatomical, physiological, skeletal system, muscular, epithelial, respiratory, cardiovascular, urinary, endocrine, nervous and immune systems Study. Emphasizes in the interrelation between the systems for normal body functioning. Studies the terminology relating to anatomy and animal physiology. The course is modeled after the dog and compared with other domestic animals using skeletons, models, audiovisual dissection specimens and laboratory experiences.

Requisites: AVET 110, BIOL 103

Co-req.: AVET 101, AVET 130

### AVET 130

#### Introduction to Nursing Veterinary

##### Three Credits

This course will provide the student with patient monitoring techniques in their work scenarios, particularly the hospitalized patient. It will demonstrate therapy techniques, housing and nutrition in a comprehensive manner. Instructs in the ways of securing, therapy and medication management. Presents the preparation and practice and patient care before, during and after different surgical procedures.

Requisite: AVET 110

Co-req.: AVET 101, AVET 120

### AVET 220

#### Common Diseases in Domestic Animals

##### Three Credits

This course exposes students to the pathophysiological processes of common infectious diseases. Relates the respective clinical symptoms with the main forms of diagnosis and therapy in large clinical scenarios. It will focus on practical concepts of immunity and prevention of infectious diseases in domestic animals, besides familiarizing students with the prevention and diagnosis of zoonotic diseases.

Requisites: AVET 101, AVET 120, AVET 130

Co-req.: AVET 230, AVET 240, AVET 280

### AVET 230

#### Techniques and Protocols of Veterinary Technology I

##### Three Credits

This course instructs in the collection, analysis and interpretation of blood samples (CBC, microscopic evaluation, coagulation, chemical and serological) and urine. Discusses diagnostic tests and treatments for anemia. Further instructs the student in the preparation of cytology samples (exudate, transudate, aspiration, printing, bone marrow, ear, and vaginal). It also discusses methods and tests for pregnancy diagnosis, ocular diagnostic tests (including tonometry, fluorescein staining, and tear production test - Schirmer tear test). In this course we will be working with simulators instead of live animals to enhance the skills and expertise in the techniques and protocols of veterinary technology.

Requisites: AVET 101, AVET 120, AVET 130

Co-req.: AVET 220, AVET 240, AVET 280

### **AVET 231**

#### **Techniques and Protocols of Veterinary Technology II Three Credits**

This course discusses techniques and protocols for medical emergencies, poisonings and intensive care. The student is instructed in basic necropsy techniques and procedures. It discusses and demonstrates the effective management and patient safety in all phases of anesthetic procedures. Instructs in the handling of laboratory animals, exotic birds, small mammals and fish. In this course we will be working with simulators instead of live animals to enhance the skills and expertise in the techniques and protocols of veterinary technology.

Requisites: AVET 230

Co-req.: AVET 250, AVET 260, AVET 281

### **AVET 240**

#### **Animal Pharmacology and Toxicology Three Credits**

This course provides students the opportunity to develop critical thinking concepts related to pharmacology and applied to the process of veterinary medicine. We describe the pharmacological principles of prescription drugs in the field of veterinary medicine. Students will understand the veterinary products and the latest drug developments. Training the student in the various techniques of administration and dosage of medicine for patients in veterinary care.

Requisites: AVET 101, AVET 130, BIOL 103

Co-req.: AVET 220, AVET 230, AVET 280

### **AVET 250**

#### **Grooming and Veterinary Psychology Three Credits**

Description of the domestic animal characteristics and their respective grooming styles for the most common breeds. Discussion of the different ways of categorizing domestic animals (size, color, characteristics, coat type). Review of grooming subjects including equipment, techniques, cares, preparation, bath, drying and clipping.

Requisite: AVET 110

Co-req.: AVET 231, AVET 260, AVET 281

### **AVET 260**

#### **Management, Practice and Farm Animal Disease Three Credits**

This course discusses the husbandry of farm animals including breeds, behavior, reproduction, nutrition and support. It discusses the best practices for proper

management of farm animals. Demonstrate medical and surgical nursing for large species. It also discusses techniques in therapy, necropsy, dentistry and assisted reproduction for farm animals.

Requisites: AVET 130, AVET 220

Co-req.: AVET 231, AVET 250, AVET 281

### **AVET 280**

#### **Clinical Practice I Three Credits**

This course and lab integrate the knowledge acquired by placing students in practice ruled centers. Students will be working directly with a veterinarian, executing the procedures requested and needed to diagnose and treat small animals. They will be monitored and evaluated in carrying out their duties as future veterinary technician. The veterinarian and vet technicians will be serving as a supervisors, counselors and advisors. The clinical portion of the course will consist of 14 hours per week making a total of 200 hours.

Requisites: AVET 120, AVET 130

Co-req.: AVET 220, AVET 230, AVET 240

### **AVET 281**

#### **Clinical Practice II Three Credits**

This course and lab integrate the knowledge acquired by placing students in practice ruled centers. Students will be working directly with a veterinarian, executing the procedures requested and needed to diagnose and treat animal's farm. They will be monitored and evaluated in carrying out their duties as future veterinary technician. The veterinarian and vet technicians will be serving as a supervisors, counselors and advisors. The clinical portion of the course will consist of 14 hours per week making a total of 200 hours.

Requisites: AVET 280

Co-req.: AVET 231, AVET 250, AVET 260

## SCHOOL OF SCIENCE AND TECHNOLOGY

The School of Science and Technology (SST) at Universidad del Turabo responds to the educational needs of a society undergoing rapid economic growth and technological development. The School provides a rich learning environment in which students may pursue programs of higher education that will advance their career objectives while at the same time motivating them to continue to learn and grow intellectually throughout life. The Institute of Chemical and Biological Technology is located in the School.

It is the mission of the School to foster liberal education, to encourage the generation of knowledge and to contribute to the well being of the community. The School promotes lifelong learning, research, social and professional responsibility and growth. To these ends, the School challenges students to think critically and intuitively, recognize and value diverse perspectives, and to solve problems creatively and with perseverance.

Four majors in natural sciences are offered: general science, biology, chemistry and environmental chemistry. Each major offers basic courses as well as courses in biology, chemistry, physics and mathematics. A variety of electives are offered to ensure a well-rounded and complete education.

The objectives of the School are to:

1. Develop within graduates a broad proficiency in scientific knowledge and professional competence.
2. Provide high quality academic and practical training that will enhance the learning experience.
3. Develop in graduates the ability to think and analyze solutions to contemporary scientific problems, using the scientific method.
4. Promote and develop research at all levels.
5. Prepare students to use modern technology and instruments in their careers.
6. Establish joint research projects with other institutions, national laboratories and industries, thus promoting diversity among students and faculty.
7. Foster lifelong learning and intellectual growth.
8. Instill in graduates a sense of values which will foster responsible participation in civil and public affairs.

### Staff

**Teresa Lipsett-Ruiz** / Dean

**Carlos J. Olivo** / Associate Dean

**Vacant** / Associate Dean for Graduate Programs and Research

**Griselda Correa** / Associate Dean Center for Excellence in Advanced Technologies (CETA)

**Ruth Vallejo** / Director, Department of Biology

**José J. Ducongé** / Director, Department of Chemistry and Physics

**José Sánchez** / Director, Department of Mathematics

**David Colón** / Coordinator of Academic Programs

**Rolando Roque** / Director, Institute of Physical and Chemical Applied Research

**Luz N. Trinidad** / Director of Administrative Affairs

**Ivelisse Díaz** / Student Coordinator

**Leida Pérez** / Administrative Secretary III

### Faculty

**Jaime Abreu-Ramos** / Lecturer  
MS, University of Puerto Rico

**Ramón Alejandro-Nieves** / Instructor  
MEd, University of Phoenix

**Luis F. Ateca-Torres** / Lecturer  
MS, University of Puerto Rico

**Angel Betancourt-Rivera** / Lecturer  
MA, Dowling College

**Miguel Bonilla-Robles** / Lecturer  
MEd, University of Puerto Rico

**Verónica Castro-Simmons** / Lecturer  
MS, University of Akron, OH

**Armando Cardona-Martina** / Lecturer  
MA, University of Puerto Rico

**Eva Luz Cáceres-Roure** / Associate Professor  
MS, University of Puerto Rico

**Sharon A. Cantrell-Rodríguez** / Professor  
PhD, University of Georgia

**David Colón-Arroyo** / Instructor  
MS, University of Puerto Rico

**Pilar Dávila-Santos** / Lecturer  
MEd, Universidad del Turabo

**José J. Ducongé-Hernández** / Professor  
PhD, University of Moscow

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PhD, University of Puerto Rico

**Samuel I. Flores-Colón** / Assistant Professor  
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MEd, University of Phoenix

**Jorge David Fonseca-Mulero** / Lecturer  
MS, Universidad del Turabo

**Alfonso Heras-Llanos** / Lecturer  
MS, University of Puerto Rico

**Teresa Lipsett-Ruiz** / Professor  
PhD, Fordham University

**César M. Lozano-Paulino** / Assistant Professor  
PhD, University of Puerto Rico

**Juan A. Martínez-Soto** / Lecturer  
MEd, University of Phoenix

**Angel Ojeda-Castro** / Lecturer  
DBA, Universidad del Turabo

**Carlos J. Olivo-Delgado** / Lecturer  
EdD, University of Puerto Rico

**Alberto R. Puente-Rolón** / Lecturer  
MS, University of Puerto Rico

**Olga Lucía Quintero-Fonseca** / Instructor  
MS, University of Puerto Rico

**Agustín Ríos-Ramos** / Professor

PhD, University of Puerto Rico

**Angel E. Rivera-Collazo** / Associate Professor  
PhD, University of Illinois

**Francisco J. Rivera** / Lecturer  
MS Universidad del Turabo

**Maritza Rodríguez-Colón** / Instructor  
MEd, University of Phoenix

**Rolando Roque-Malherbe** / Professor  
PhD, Moscow Institute of Steel and Alloys

**José Sánchez-Villafañe** / Assistant Professor  
MS, University of Puerto Rico

**Julio Santalices-Martínez** / Lecturer  
MEd, University of Puerto Rico

**Julio Torres-Del Valle** / Lecturer  
MS, University of Phoenix

**Ruth Vallejo-Flores** / Associate Professor  
MS, University of Puerto Rico

**Orlando Valles-Ramos** / Lecturer  
MEd, University of Phoenix

**José L. Vázquez Bello** / Lecturer  
MS, London University

## PROGRAMS OF STUDY

### ASSOCIATE DEGREE IN PHARMACEUTICAL AND CHEMICAL OPERATIONS

#### PROGRAM OBJECTIVES

The objectives of the proposed Pharmaceutical and Chemical Processes program are consistent with the objectives of the School of Science and Technology, as spelled out in the UT "Proposal for the Establishment of a School of Science and Technology" submitted in July, 1989 to the Higher Education Council. As stated in this document, the SST is committed to establishing science programs with high standards that will increase the capabilities of the University, expand student career opportunities, and enhance the relationship between the University, the community, and industry.

Specifically, the program will:

- Deliver instruction using current technology, equipment, test instruments and computers;
- Help fulfill the need for technicians in the fields of Pharmaceutical and Chemical Processes, particularly in the eastern and southeastern regions of Puerto Rico;
- Ensure the intellectual development of students enrolled in the program;
- Develop technicians capable of undertaking leadership roles in professional, civic, and social environments.

**SPECIFIC OBJECTIVES**

Upon completion of the Associate degree in Pharmaceutical and Chemical Processes, the student will be able to:

- Operate basic pharmaceutical equipment.
- Use teamwork to solve real problems encountered in the industrial workplace.
- Monitor basic processes and operations, automatic controls and data analysis.
- Prepare simple basic written and oral reports in English and Spanish.

<b>Total Credits</b>	<b>63</b>
<b>General Education Courses</b>	<b>27</b>
<b>Fundamental Engineering Courses</b>	<b>9</b>
<b>Major Courses</b>	<b>27</b>

<b>General Education Courses</b>	<b>(27 credits)</b>
MATH 102 Applied Basic Mathematics	3
CHEM 101 Applied Chemistry	4
BIOL 100 Applied Microbiology	4
PHSC 120 Technical Science	3
PTTE 200 Internship in Technology	1
ENGL 152 Intermediate English	3
ENGL 153 Advanced English	3
SPAN 151 Introduction to Language	3
SPAN 152 Introduction to Writing	3

<b>Fundamental Engineering Courses</b>	<b>(9 credits)</b>
BIOT 101 Introduction to Biotechnology Industry	3
ENGI 121 Introduction to Computers	3
METE 251 Introduction to Ind. Mechanics	3

<b>Major Courses</b>	<b>(27 credits)</b>
SCIE 250 Communication and Teams in the Workplace	3
BIOT 210 Regulations and GMP	3
BIOT 240 Validation	3
QETE 232 Continuous Improvement Tools	3
PHOP 250 Aseptic Techniques in Pharmaceutical and Chemical Processes	3
PHOP 255 Water Purification and Treatment Systems in Pharmaceutical and Chemical Processes	3
PHOP 265 Solid Dosages: Manufacturing and Packaging	3
PHOP 268 Semi-Solid and Liquid Dosages: Manufacturing and Packaging	3

PHOP 275 Principles & Operation of Chemical Processing	3
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**ASSOCIATE DEGREE IN BIOTECHNOLOGY**

**PROGRAM OBJECTIVES**

The objectives of the proposed Biotechnology program are consistent with the objectives of the School of Science and Technology (SST). The SST is committed to establishing science programs with high standards that will increase the capabilities of the University, expand student career opportunities, and enhance the relationship between the University, the community, and industry.

Specifically, the program will:

- Deliver instruction using current technology, equipment, test instruments and computers;
- Help fulfill the need for technicians in the fields of Biotechnology, particularly in the eastern and southeastern regions of Puerto Rico;
- Ensure the intellectual development of students enrolled in the program;
- Develop technicians capable of undertaking leadership roles in professional, civic, and social environments.

**Specific Objectives**

Upon completion of the Associate degree in Biotechnology the student will be able to:

- Operate basic biotechnology equipment.
- Use teamwork to solve real problems encountered in the industrial workplace, following ethical guidelines.
- Monitor basic processes and operations, automatic controls and data analysis.
- Prepare simple basic written and oral reports in English and Spanish.

<b>Total Credits</b>	<b>63</b>
<b>General Education Courses</b>	<b>27</b>
<b>Fundamental Engineering Courses</b>	<b>9</b>
<b>Major Courses</b>	<b>27</b>

<b>General Education Courses</b>	<b>(27 credits)</b>
MATH 102 Applied Basic Mathematics	3
CHEM 101 Applied Chemistry	4
BIOL 100 Applied Microbiology	4
PHSC 120 Technical Science	3
PTTE 200 Internship in Technology	1
ENGL 152 Intermediate English	3
ENGL 153 Advanced English	3
SPAN 151 Introduction to Language	3
SPAN 152 Introduction to Writing	3

**Fundamental Engineering (9 credits)**

BIOT 101	Introduction to Biotechnology Industry	3
ENGI 121	Introduction to Computers	3
METE 251	Introduction to Ind. Mechanics	3

**Biotechnology (27 credits)**

SCIE 250	Communication and Teams in the Workplace	3
BIOT 210	Regulations and GMP	3
BIOT 240	Validation	3
QETE 232	Quality Improvement Tools	3
BIOT 251	Aseptic Techniques in Biotechnology	3
BIOT 255	Water Purification and Treatment Systems in Biotechnology	3
BIOT 220	Plant Design and Process Support	3
BIOT 231	General Manufacturing Biotechnology I	3
BIOT 250	General Manufacturing Biotechnology II	3

record integrity, documentation, 483's, business impact in dollars and jobs.

Requisite: CHEM 100 or BIOL 100

**BIOT 220  
Plant Design and Process Support  
Three Credits**

This course provides basic instruction in plant design process support in industrial biotechnology. Topics to be covered include general building design, water systems, HVAC, utilities, instrumentation, process control systems and external environmental effects. Topics will also include small parts and labware preparation, labware washing, theory/use of autoclaves, CIP, SIP, validation testing and preventive maintenance.

Requisite: CHEM 100 or BIOL 100

**BIOT 231  
General Manufacturing Biotechnology I  
Three Credits**

This course covers the basic principles and experiences related to cell culture, sterilization, media preparation and recovery.

Requisite: CHEM 100 or BIOL 100

**BIOT 240  
Validation  
Three Credits**

The course provides an introduction to the topics of installation qualification, operational qualification, performance qualification, process qualification, cleaning validation, sterilizing filter validation, SPC and continuous process validation, validation testing, preventive maintenance, and principles of metrology. A laboratory validation project is included in the course.

Requisite: BIOT 210

**BIOT 250  
General Manufacturing Biotechnology II  
Three Credits**

This course covers the basic principles and experiences related to cell culture, microbes, fermentation, production, recovery, and packaging.

Requisite: CHEM 100 or BIOL 100

**BIOT 251  
Cleaning and Sterilization in Bioprocess Engineering  
Three Credits**

The course will focus on the support equipment found in bioprocessing plants, such as steam generators for sterilization, water systems, biowaste decontamination

**COURSE DESCRIPTIONS**

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

**BIOL 100  
Applied Microbiology  
Three Credits**

The course emphasizes the fundamental principles of microbiology and the role of microorganisms in industrial processes. Topics included are: characteristics of microorganisms, emphasizing structure and identification,, use of microscope and staining techniques, isolation of bacteria in pure cultures, handling and cultivation of aerobic and anaerobic bacteria, biochemical tests, and semi-automatic and automatic techniques for identifying bacteria.

Requisite: MATH 100

**BIOT 101  
Introduction to Biotechnology Industry  
Three Credits**

This course provides an overview of industrial biotechnology, pharmaceutical technology, agro-technology and chemical processes. In addition, the course will include laboratory safety and documentation.

**BIOT 210  
Regulations and Good Manufacturing Practices  
Three Credits**

In a general way, this course covers the current regulations that apply to Puerto Rico, including overview of OSHA, PROSHA, and EPA/EQB, with the major focus on FDA rules and regulations. Course emphasis will be on Good Manufacturing Practices (cGMP's), quality awareness,

systems, as well as heating, ventilation, and air conditioning.

Requisite: CHEM 100 or BIOL 100

### **BIOT 255**

#### **Water Treatment Membrane Processes**

##### **Three Credits**

The course covers the major aspects related to membrane processes for water purification and treatment. Emphasis will be on membrane applications, bio-fouling, reversing osmosis and ultra-filtration.

Requisite: CHEM 100 or BIOL 100

### **CHEM 101**

#### **Applied Chemistry**

##### **Four Credits**

The class is designed to provide students with a general knowledge of matter, chemical compounds and molecules, gases and solutions, preparation of solutions and dilutions, solubility, density, colligative properties, acids and bases and in general the main inorganic and organic chemical processes used in industry. This course will complement the student's knowledge by using modern laboratory techniques including measurements of pH and conductivity, UV-visible and fluorescence spectroscopy.

Requisite: MATH 121

### **ENGI 121**

#### **Introduction to Computers**

##### **Three Credits**

The course presents an introduction to the history of computers and familiarizes students with basic computer software and hardware, as well as the use of software packages such as Word, Excel, and PowerPoint. The course also introduces students to the Internet and to webpage design.

### **MATH 100 @**

#### **Basic Mathematics**

##### **Three Credits**

This course is an introduction to mathematics intended for students who need to develop basic skills. The following topics are included: Fundamental operations with natural and cardinal numbers, fractions, decimals, ratios and proportions, percentages, and measurements.

### **MATH 102**

#### **Applied Basic Mathematics**

##### **Three Credits**

This is an introductory course which includes, among other topics, fundamental operations with natural and whole numbers, fractions, decimals, ratios and proportions, percentages, measurements, and the effective use of the

calculator. The course is oriented towards problem solving and the development of skills needed to perform mathematical operations.

### **METE 251**

#### **Introduction to Industrial Mechanics**

##### **Three Credits**

This course provides basic mechanical skills and repair techniques common to most fields of industrial maintenance. It includes topics such as precision measuring, instruments and general safety rules common in industry, as well as lock-out/tag-out. This is a hands-on course which includes troubleshooting and overhaul of mechanical systems such as pumps, assembly lines, conveyors, and associated industrial machinery.

Requisite: BIOT 101

### **PHOP 250**

#### **Aseptic Techniques in Pharmaceutical & Chemical Processes**

##### **Three Credits**

The course will focus on the step-by-step use of aseptic techniques, including actual laboratory practices for various cleaning room classifications, sample handling, laminar flow hoods and gowning. Methods of sterilization, sanitation, and disinfection are discussed.

Requisite: CHEM 100 or BIOL 100

### **PHOP 255**

#### **Water Purification and Treatment Systems in Pharmaceutical & Chemical Processes**

##### **Three Credits**

The course covers the major aspects related to high purity water system use in the chemical and pharmaceutical industries. Emphasis will be on equipment set-up and maintenance, multimedia filtration, chlorination, softening, carbon adsorption, filtration, distillation, storage and distribution, and steam in place.

Requisite: CHEM 100 or BIOL 100

### **PHOP 265**

#### **Solid Dosage: Manufacturing & Packaging**

##### **Three Credits**

This course covers solid dosage, pharmacy reweighing, formulation, blending/mixing, and formulation. It emphasizes granulation, powdering, lubrication, milling, and sieving. The course also focuses on tablet compression and tablet coating. In addition, the course exposes the students to the practices of WIP, CIP, SIP and the industrial regulations and the packing processes needed.

Requisite: CHEM 100 or BIOL 100

**PHOP 268**

**Semi-solid and Liquid Dosages: Manufacturing and Packaging**

**Three Credits**

This course covers semi-solid and liquid dosages, preparation of solution suspensions and colloids, as well as Pharmacy-reweighing, formulation, compounding sterile filtration, component preparation, container sterilization, dehydrogenation, stopper washing, siliconizing, sterilizing, filing, stoppering. Lyophilization, lyophilize set-up and maintenance. In addition, the course addresses the packing packaging processes needed.

Requisite: CHEM 100 or BIOL 100

**PHOP 275**

**Principles and Operation of Chemical Processing**

**Three Credits**

The class is designed to provide students with a general knowledge of those methods and analytical techniques whose principles should be understood. This course will be focused on the most useful and conventional procedures of chemical processes, such as distillation, centrifugation, crystallization, and, in general, purification and separation techniques used in chemical processes. The laboratory work emphasizes the preparation of solutions, physical-chemical measurements, and separation and purification techniques. Students will perform a variety of activities focused on different topics treated in the classroom. Due to its importance as a tool for learning the proper formal presentation of experimental information, a laboratory report corresponding to each session will be required from each laboratory group.

Requisite: CHEM 100 or BIOL 100

**PHSC 120**

**Technical Science**

**Three Credits**

The course provides students with an introduction to the basic principles and applications of mechanics, electricity and magnetism in matter.

Requisite: MATH 100

**PTTE 200**

**Internship in Technology**

**Three Credits**

This course extends classroom activities to a supervised, on-the-job learning experience directly connected to the student's educational or occupational goal. The student will be under the direct supervision of a college faculty member as well as industrial personnel. Participants must attend orientation activities to familiarize themselves with internship program requirements and workplace habits. In

addition, they must comply with pre-internship consultation with the faculty supervisor and complete 10 hours per week of training for a period of 6 weeks during the summer. The student will receive written evaluations from the industrial and faculty supervisors.

Requisite: PHOP 250, PHOP 255, PHOP 265, PHOP 268

**QETE 232**

**Continuous Improvement Tools**

**Three Credits**

The course defines the philosophy and presents the benefits of the concepts of quality, continuous quality, and quality improvement. The course covers total management, quality and productivity improvement tools, supplier processes, and customer relationships, as well as internal and external customer satisfaction. In addition, lean manufacturing and six sigmas for continuous improvement are presented.

Requisite: MATH 100

**SCIE 250**

**Communication and Teams in the workplace**

**Three Credits**

This course will provide the student with the basic skills necessary to work as a member of a team in business or organizational environments.

## SCHOOL OF SOCIAL SCIENCES

The School of Social and Human Sciences of Universidad del Turabo offers degree programs which enable students to compete optimally in the workplace. At the undergraduate level, the School offers a Bachelor of Arts degree in social sciences, with majors in criminology, psychology, social work and communications. It also offers a Bachelor's Degree in Humanities, with majors in socio-humanistic studies and graphic arts. In addition, the school offers a Master's Degree in Public Affairs, with specialties in criminal justice, human services, arts administration, and forensic sciences, as well as a Master's Degree in Psychology, with a specialty in counseling psychology.

### VISION

To develop productive and effective members of the global community with a professional, social, ethical and humanistic foundation.

### MISSION

The School of Social and Human Sciences is characterized by its dual mission.

The school provides high quality academic programs at both the undergraduate and graduate level. The School undertakes this in a setting where excellence in teaching and learning are encouraged in the classroom, in practical internships, and in strong relationships with projects in the community at large. The basic goal is to provide our graduates not only with competence in their chosen field, but also with the diversity of experience needed to understand and appreciate the contributions of other disciplines.

The School is also responsible for the general social and humanistic foundation of all students at the Universidad del Turabo. The General Education curriculum is student-centered, emphasizing the importance of global interdependence and language competence. To this end, the school has established a **Language Center** to develop students' ability to understand and express ideas in an articulate fashion. Moreover, the School has developed an interdisciplinary curriculum geared toward the analysis of human and social problems and the search for solutions through an understanding of human diversity.

### General Objectives in all School Curriculum and Programs:

Maintain academic excellence by studying, teaching and social research.

Promote the knowledge and preservation of Puerto Rican and universal cultural values.

Develop communicative competency in Spanish and English.

Develop the capacity to analyze problems and find solutions.

Develop the understanding that is necessary for collaboration resulting in the sharing of ideas within disciplines, institutions, communities and nations.

Promote understanding of the human condition, enabling students to view the world with compassion and to act responsibly.

### STAFF

**Marco A. Gil de Lamadrid** / Dean

**Tomasita Pabón** / Associate Dean

**Edward Fankhanel** / Associate Dean for Psychology and Social

**Víctor Manuel García** / Director of Communications Department

**María M. Ortiz** / Director Social Work Department

**Jessica Velázquez Rodríguez** / Out Patient Clinic Director

**Rosa M. Rodríguez** / Administrative Director

### AREA OF SOCIAL SCIENCES

#### Description

The Area of Social Sciences focuses on the study of human nature, culture, ideas, institutions, human relations, social change and the relationship of human beings with the environment.

The School offers a Bachelor of Arts Degree, with majors in psychology, criminology, public administration, social work, general social sciences and communications. The school also offers the Associate of Arts Degrees, with majors in public administration and general social sciences.

Two graduate degrees are offered. The first of these is the Master's Degree in Public Affairs, with four specialties: criminal justice, human services administration, arts

administration and forensic sciences. The second is the Master's Degree in Psychology with a specialty in counseling psychology.

**Objectives:**

Provide students with interdisciplinary knowledge leading to an understanding of modern society and its principal social problems.

Help students obtain a scientific and philosophical education which promotes a critical attitude towards human and organizational behavior.

Foster critical analysis and research of the economic, social and political situation in Puerto Rico, and encourage interest in seeking alternatives.

Prepare the student to pursue graduate studies in the social sciences and related fields.

**PROGRAMS OF STUDY**

**ASSOCIATE DEGREE IN ARTS:  
PUBLIC ADMINISTRATION**

<b>Total Credits</b>	<b>75</b>
<b>General Education Courses</b>	<b>30</b>
<b>Required Courses</b>	<b>24</b>
<b>Major Courses</b>	<b>21</b>

<b>General Education Courses</b>	<b>(30 credits)</b>
SPAN 151	Fundamentals of Reading and Writing I 3
SPAN 152*	Fundamentals of Reading and Writing II 3
ENGL 151	Basic Communicative English I 3
ENGL 152*	Basic Communicative English II 3
SOSC 101	Introduction to Social Science I 3
SOSC 102	Introduction to Social Science II 3
HUMA 111	Civilizations and Universal Culture I 3
HUMA 112	Civilizations and Universal Culture II 3
MATH 120	Introduction to Algebra 3
COIS 201	Data Processing Principles 3

<b>Required Courses</b>	<b>(24 credits.)</b>
POSC 203	Introduction to Political Science (Compendium) 3
SOCI 203	Principles of Sociology (Compendium) 3
ECON 123	Principles of Economics (Compendium) 3
POSC 253	Political System of Puerto Rico 3
STAT 300	Statistical Elements I 3
PSYC 123	Survey Course in Psychology 3
SOSC 320	Social Research Techniques 3
PSYC 305	Human Relations and Public Service 3

<b>Major Courses</b>	<b>(21 credits)</b>
POSC 358	Administrative Law 3
PUAD 201	Introduction to Public Administration 3
PUAD 203	Public Personnel Administration 3
PUAD 215	Communication and Writing in Public Service 3
PUAD 315	Organizational Psychology 3

PUAD 325	Municipal Government Administration	3
PUAD 360	Labor Relations and Collective Bargaining in Government	3

\* Or its equivalent

**ASSOCIATE DEGREE IN ARTS: GENERAL SOCIAL SCIENCES**

<b>Total Credits</b>	<b>75</b>
<b>General Education Courses</b>	<b>54</b>
<b>Required Courses</b>	<b>21</b>

<b>General Studies</b>	<b>(54 credits)</b>
SPAN 151	Fundamentals of Reading and Writing I 3
SPAN 152*	Fundamentals of Reading and Writing II 3
ENGL 151	Basic Communicative English I 3
ENGL 152*	Basic Communicative English II 3
SOSC 101	Introduction to Social Science I 3
SOSC 102	Introduction to Social Science II 3
HUMA 111	Civilizations and Universal Culture I 3
HUMA 112	Civilizations and Universal Culture II 3
MATH 120	Introduction to Algebra 3
BIOL 101	Introduction to Biological Science I 3
BIOL 102	Introduction to Biological Science II 3
	or
PHSC 101	Introduction to Physical Science I 3
PSHC 102	Introduction to Physical Science II 3
SPAN 250	Writing Techniques 3
SPAN 452	Puerto Rican Literature 3
ENGL 231	Research and Writing 3
ENGL 331	Speech Communication 3
HIST 251	History of Puerto Rico I 3
HIST 252	History of Puerto Rico II 6
STAT 300	Basic Statistics 3

<b>Required Courses</b>	<b>(21 credits)</b>	
Select from the following courses:		
POSC 201	Introduction to Political Sciences I 3	
POSC 202	Introduction to Political Sciences II 3	
SOSC 320	Social Research Techniques 3	
ECON 121	Economic Principles and Problems I 3	
ECON 122	Economic Principles and Problems II 3	
GEOG 201	Physical Geography 3	
PSYC 121	Psychology I 3	
PSYC 122	Psychology II 3	
SOCI 201	Sociology Principles I 3	
SOCI 202	Sociology Principles II 3	
PSYC 205	Personal Growth and Development 3	
PSYC 225	Social Psychology 3	
POSC 253	Political System of Puerto Rico 3	

**ASSOCIATE DEGREE PENAL JUSTICE WITH EMPHASIS  
IN PUBLIC SECURITY**

<b>Total Credits</b>	<b>54</b>
<b>General Education Courses</b>	<b>27</b>
<b>Required Courses</b>	<b>11</b>
<b>Major Courses</b>	<b>16</b>

**General Education Courses (27 credits)**

SPAN 111	Reading in Spanish	3
SPAN 112	Reports Writing in Spanish	3
ENGL 108	Oral Communication I	3
ENGL 109	Oral Communication II	3
PJPS 108	Basic Ethical Values	3
PJPS 112	Civil Rights and Crisis Situations	3
PJPS 116	Intervention with Special Populations	3
PJPS 120	Mediation and Intervention	3
PJPS 124	Human and Community Relations	3

**Professional Courses (11 credits.)**

PJPS 132	Information and Communication Technologies for Public Security Officers	2
PJPS 204	First Aid for Criminal Justice Officers	2
PJPS 208	Physical Training and Nutrition for Criminal Justice Officers	2
PJPS 210	Integrated Seminar in Penal Law, Criminal Procedure and Evidence	3
PJPS 214	Crime Scene Investigation	2

**Tactical Courses (16 credits.)**

PJPS 216	Investigation of Traffic Accidents	2
PJPS 220	Transit Interventions	2
PJPS 224	Execution of Vehicle Operations	2
PJPS 228	Police Patrol I	2
PJPS 229	Police Patrol II	2
PJPS 236	Use and Management of Less Lethal Weapons	2
PJPS 238	Principles of Tactical Operations	2
PJPS 240	Use and Management of Firearms	2

**ASSOCIATE DEGREE PENAL JUSTICE WITH EMPHASIS  
IN CORRECTIONAL SECURITY**

<b>Total Credits</b>	<b>54</b>
<b>General Education Courses</b>	<b>27</b>
<b>Required Courses</b>	<b>11</b>
<b>Major Courses</b>	<b>16</b>

**General Education Courses (27 credits)**

SPAN 111	Reading in Spanish	3
SPAN 112	Reports Writing in Spanish	3
ENGL 108	Oral Communication I	3
ENGL 109	Oral Communication II	3
PJPS 108	Basic Ethical Values	3
PJPS 112	Civil Rights and Crisis Situations	3
PJPS 116	Intervention with Special Populations	3
PJPS 120	Mediation and Intervention	3
PJPS 124	Human and Community Relations	3

**Professional Courses (11 credits.)**

PJPS 132	Information and Communication Technologies for Public Security Officers	2
PJPS 204	First Aid for Criminal Justice Officers	2
PJPS 208	Physical Training and Nutrition for Criminal Justice Officers	2
PJPS 210	Integrated Seminar in Penal Law, Criminal Procedure and Evidence	3
PJPS 214	Crime Scene Investigation	2

**Tactical Courses (16 credits.)**

PJPS 218	Correctional Administration Systems	2
PJPS 222	Constitutional Law and Corrections	2
PJPS 226	Management and Supervision of Inmates	2
PJPS 232	Growth and Development of Inmates in Corrections	2
PJPS 234	Probation, Parole and Treatment in the Community	2
PJPS 236	Use and Management of Less Lethal Weapons	2
PJPS 238	Principles of Tactical Operations	2
PJPS 240	Use and Management of Firearms	2

## COURSE DESCRIPTIONS

(Courses marked with @ could be offered in both modalities, traditional or on-line.)

### **ECON 121-122**

#### **Economic Principles and Problems I and II**

##### **Six Credits**

The course focuses on economic theories and practice. The topics covered include value and price, exchange, distribution, production, employment, national income, international commerce, public expenses, economic cycles, social welfare, and the influence of government on the economy.

Requisites: SOSC 101-102

### **ECON 123**

#### **Economic Principles and Problems (Compendium)**

##### **Three Credits**

The course centers on economic theories, and covers topics such as value and price, distribution, protection, and the role of government in the economy.

Requisites: SOSC 101-102

### **ENGL 108**

#### **Oral Communication I**

##### **Three Credits**

This course is designed to develop the student's listening comprehension skills in English. Students will be exposed to a variety of social and professional listening activities for law enforcement officers who focus on acquiring the structure and vocabulary of the language. Formal and informal use of the language will be analyzed.

### **ENGL 109**

#### **Oral Communication II**

##### **Three Credits**

This is a conversational English course in which students practice language that can be put to immediate use. Students will learn the appropriate language for different social and professional situations including formal and informal speech. Students will learn job-specific language for law enforcement officers to interact with the public in English. The curriculum has an audio-oral focus, moving from listening to a fuller command of integrated listening and conversational skills.

### **GEOG 201**

#### **Physical Geography**

##### **Three Credits**

The course centers on the principles of geography and their application to the environment, climate, soil, vegetation and natural resources.

Requisites: SOSC 101 - 102

### **PJPS 108**

#### **Basic Ethical Values**

##### **Three Credits**

Study of the basic ethical values, and the importance of its application in labor scenario by security, protection and correctional officers. Discussion of applicable legislation and jurisprudence.

### **PJPS 112**

#### **Civil Rights and Crisis Situations**

##### **Three Credits**

Study of the Constitutional laws of inmates because the commission of crime in Puerto Rico. Analysis of the practices and interventions with inmates in the correctional institutions. Analysis of the standards and their accomplishment in the institutions imposed by the case of Morales Feliciano and its effects in our jurisdiction. Integrates daily discussion in class and state and federal jurisprudence. Students will use the Commonwealth of Puerto Rico and the United States of America Constitutions.

### **PJPS 116**

#### **Intervention with special Populations**

##### **Three Credits**

Study of the theoretical and practical aspects of the intervention process by security, protection and correctional officers with special population as: juveniles, elderly, domestic violence victims, ethnical groups, drunkards and individuals with mental health disease.

### **PJPS 120**

#### **Mediation and Intervention**

##### **Three Credits**

Study and critical of the mediation process as an intervention method to manage conflicts. Study of theoretical foundations, stages strategies and effective techniques management general disputes by protection, security and correctional officers.

### **PJPS 124**

#### **Human and Community Relations**

##### **Three Credits**

Study of Human relations and with community to public security officers. The course is focused on the descriptions of the characteristics in the community oriented police system, their importance and applications in the actual society. Also it pretends the police engagement to work with communities, the preventive strategies development, more proactive than reactive to deal with the criminality.

**PJPS 132**

**Information and Communication Technologies for Public Security Officers**

**Two Credits**

Course for the study of the evolution of human communication and application of technology of exchange information. Lays the foundation in the methods of security and protection of communications between individuals. It describes the processes of verbal and written interaction in a laboratory for the application of technology to the processes that occur in class.

**PJPS 204**

**First Aid for Criminal Justice Officers**

**Two Credits**

Instruct students in the primary care in medical emergencies that are included in the duty of the police as first responders/rescuers. The students will learn to provide their services in scenarios that require specialized knowledge and abilities in: anatomy, physiology, the basic human body, vital signs, shock, fainting, burns, diabetes, child birth, epilepsy, and heart attacks. Through practical exercises, the management of the following emergencies will be taught: choking, bleeding, and basic cardiopulmonary resuscitation (CPR).

**PJPS 208**

**Physical Training and Nutrition for Criminal Justice Officers**

**Two Credits**

The students will practice different exercise routines that permits them to perform each task, skill or function as agents of law and order. The course will emphasize will be a holistic physical development including nutritional, rest and physical exercises aspects.

Requisite: Physical test

**PJPS 210**

**Integrated Seminar in Penal Law, Criminal Procedure and Evidence**

**Three Credits**

Study of the general principles of the Penal Code of Puerto Rico, Special Penal Laws, Criminal Procedures Rules Evidence Rules that controls the juridical order in Puerto Rico. The basic as to the legal rules applicable to the minor offenses, special procedures and exception to the rules previously established. Methodology is used as the main study the analysis of case law under judicial hermeutical techniques.

**PJPS 214**

**Crime Scene Investigation**

**Two Credits**

The study of the history and purpose of criminal investigations and the terminology of this specialty. Provide adequate instruction in the elements, concepts and fundamental techniques in criminal investigations, such as: profile of the delinquent or criminal, emphasizing criminology, crime scene management, development of confidants and informants, and characteristics of an investigator. Practical exercises that apply the acquired knowledge will be presented.

**PJPS 216**

**Investigation of Traffic Accidents**

**Two Credits**

This course will discuss the duties, responsibilities, and regulations of drivers mandated by the Vehicle and Transit Law of Puerto Rico. Additionally, the student will learn how to apply and enforcement this law. Also, the student will understand the different determining factors and legal aspects of accidents in order to conduct traffic accident investigations.

**PJPS 218**

**Correctional Administration Systems**

**Two Credits**

Study of the Correctional System including ends structures and functions. Also, diverse theories and situation in the correctional settings will be study. The study includes contemporary theories of punishments, corrections and rehabilitation and the problems and situations that affect the correctional official in the field of the Correctional system.

**PJPS 220**

**Transit Interventions**

**Two Credits**

This course will discuss the Vehicle and Transit Law of Puerto Rico and its implementation and application as it relates to the duties and responsibilities of Public Order Agents/Officers while driving. The student will also learn internal protocol and operating procedures that should be followed to perform safe and effective interventions.

**PJPS 222**

**Constitutional Law and Corrections**

**Two Credits**

The course is based in the study of constitutional rights of the inmates because the commission of a felony crime in Puerto Rico. It profounds in the analysis of practices and interventions with inmates in the correctional institutions. Equally, the regulations and norms after Morales Feliciano case and their effects will be study. Integrates daily discussion in class, the jurisprudence at local and federal

level and students will use the United States Constitution and the Constitución del Estado Libre Asociado de Puerto Rico.

**PJPS 224**

**Execution of Vehicle Operations**

**Two Credits**

Study and practice of vehicle operation techniques in different environments and routes that protection and security officers should apply in various activities as: patrolling, tracing and intervention. The course will emphasize in motor skills development by practical drills.

**PJPS 226**

**Management and Supervision of Inmates**

**Two Credits**

Introductory course of inmate's supervision techniques for custody agents and correctional employees. Emphasis will be in the specific development of the communication methods that are necessary to work in the correctional institutions. The primary goals of the course are: the development of the ability to work potential dangerous environment, the implementation and follow up of direct orders, recognition of the offenders manipulation, observation methods, knowledge and corporal language implementation and how to solve daily work problem a population culturally different.

**PJPS 228**

**Police Patrol I**

**Two Credits**

Study of daily transit police patrol, the difficulty to save lives in our community, and watch and secure property. Analysis of difficulties when the officer on patrol tries to maintain law and order that regulate drivers and pedestrians different types of patrol will be further examined to establish a teaching and learning process in order to develop an effective, short term and long term, operational plan that minimizes crime in society.

**PJPS 229**

**Police Patrol II**

**Two Credits**

Continuation study of daily transit police patrol, the difficulty to save lives in our community, and watch and secure property. Analysis of difficulties when the officer on patrol tries to maintain law and order that regulate drivers and pedestrians different types of patrol will be further examined to establish a teaching and learning process in order to develop an effective, short term and long term, operational plan that minimizes crime in society. Includes practical exercises to reinforce the patrolling skills of the public security officers.

**PJPS 232**

**Growth and Development of Inmates in Corrections**

**Two Credits**

In the course will be discussed and analyzed the treatment of the inmates in the correctional system the rehabilitation strategies, the prevention models and service programs and the development related to philosophies and correctional practices. Students will focus critically in theoretical affairs, and policies related to treatment and rehabilitation programs for adults and juveniles.

**PJPS 234**

**Probation, Parole and Treatment in the Community**

**Two Credits**

Integral study of the general principles of Probation Parole and the Treatment Community of the convicted persons in Puerto Rico. Examination of the requisites and effects of probation. Analysis of the structure and regulations of the Parole Board. Explores the alternatives of convicted person's treatment in community and the importance and effective social reinsertion to archive their rehabilitation.

**PJPS 236**

**Use and Management of less lethal weapons**

**Two Credits**

Study and practice of techniques and tactics in the use and manage of less lethal weapons as: baton, Taser, chemical agents and rattan. The course emphasize the use and management of less lethal weapons strength as alternative for leveling the use of force by the protection, correctional and security officers in the intervention process with citizens ensuring their safety and protection.

**PJPS 238**

**Principles of Tactical Operations**

**Two Credits**

Study and practice techniques of self-defense, and the use and management of the baton established by General Oder 98-6. Students are taught the techniques and mechanics of arrest utilizing restraining devises (shackles, and metal and plastic handcuffs). Students are trained to recognize the procedures to pursue a vehicle intervention (day and night), occupants of the vehicle, and the transportation of the occupants. Students are trained in the tactical formations in order to manage situations of civil disturbance and crowd control. The student will know and apply the implementation of aquatic rescues utilizing the training tank (swimming pool for training).

**PJPS 240**

**Use and Management of Firearms**

**Two Credits**

This course will capacitate the student to carry and manage weapon in an adequate and legal manner. Emphasis will

be given to the state and federal legal regulations in the use of weapons.

**POSC 201-202**

**Introduction to Political Science I-II**

**Six Credits**

The course explores the history of political thought, including the formation of the modern state, contemporary political ideology, theory of political institutions, international relations, and the means created in the modern state for the participation of citizens.

Requisites: SOSC 101 – 102

**POSC 203**

**Principles of Political Science (Compendium)**

**Three Credits**

The course analyzes the modern state, its structure, and citizen participation. Political decision-making in contemporary societies is discussed.

Requisites: SOSC 101 – 102

**POSC 253**

**Political System of Puerto Rico**

**Three Credits**

The course centers on political institutions in Puerto Rico from 1870 to the present. It traces legal and political evolution from the “Carta Autonómica” to the legislation establishing the elected governorship and the Commonwealth.

Requisite: SOSC 101 – 102

**POSC 358**

**Administrative Law**

**Three Credits**

The course traces the development of administrative law, as well as administrative action, procedures and agencies, court reviews, interpretation of legislation, regulations and retroactivity. Areas discussed include administrative discretion in policy-making, jurisdiction and investigative powers, as well as notification and hearings, the decision-making process and other related topics.

Requisite: POSC 253

**PSYC 121-122**

**Psychology I and II**

**Six Credits**

The course is a general introduction to basic theories of human behavior and their relation to social progress and individual growth.

Requisite: SOSC 101-102

**PSYC 123**

**Survey Course in Psychology**

**Three Credits**

Condensed version of PSYC 121-122.

Requisites: SOSC 101-102

**PSYC 205**

**Personal Growth and Development**

**Three Credits**

The course emphasizes the dynamics of human behavior and techniques for effective interpersonal relations. Human activity and mechanisms for personal and social adjustment are analyzed in order to achieve understanding of self and of others.

Requisites: PSYC 121-122

**PSYC 225**

**Social Psychology**

**Three Credits**

The course centers on the relationship between the individual and society. Analyses include attitudes, perception of group behavior, prejudices and conformity.

Requisites: PSYC 121-122

**PSYC 305**

**Human Relations and Public Service**

**Three Credits**

The course examines the complexity and the dynamics of human relationships. It includes a study of the variables that influence individual behavior in group situations as well as motivation, leadership, communication, resistance to change and the importance of good human relations in public service.

Requisites: PSYC 121-122 or PSYC 123

**PUAD 201**

**Introduction to Public Administration**

**Three Credits**

The course introduces the theory of public administration and the field of organizational science. Problem identification and classification, as well as the use of models for analyzing different structures are also presented.

Requisites: SOSC 101-102

**PUAD 203**

**Public Personnel Administration**

**Three Credits**

The course presents theoretical, legal and practical aspects of personnel administration. The Personnel Law and regulations of the Commonwealth of Puerto Rico are

studied, so as to gauge their impact on public administration practices.

Requisites: SOSC 101-102

### **PUAD 215**

#### **Communication and Writing in Public Service Three Credits**

The course centers on communication levels in public administrations, departments and agencies. The different types of documents that public officials must produce are studied. Writing exercises are emphasized.

Requisites: SPAN 101-102

### **PUAD 315**

#### **Organizational Psychology Three Credits**

Human behavior in the organization. Main theories of organization and organizational development. Research on structure and organizational climate.

Requisite: PSYC 123

### **PUAD 325**

#### **Municipal Government Administration Three Credits**

The course presents the structure and operation of Puerto Rico's municipal government. Problems of municipal administration, as well as laws governing the municipalities and their agencies are also studied.

Requisite: POSC 203

### **PUAD 360**

#### **Labor Relations and Government Collective Bargaining Three Credits**

The course centers on labor relations in Puerto Rico, as well as legislation and case law in local and federal jurisdictions.

Requisite: POSC 358

### **SOCI 201-202**

#### **Principles of Sociology I and II Six Credits**

The course discusses the individual in the social environment, social organization, social change and control. Mental health, juvenile delinquency, crime, unemployment and racial conflict are also presented. The influence of institutions such as the family, the school, the church, and state is also analyzed.

Requisites: SOSC 101-102

### **SOCI 203**

#### **Principles of Sociology (Compendium) Three Credits**

The course is a compendium of SOCI 201-202 directed to criminology students. Topics discussed include social organization, cultural phenomena, and socialization. Also studied are basic institutions, social deviation, stratification, social mobility, social and cultural change.

Requisites: SOSC 101-102

### **SOSC 101 - 102**

#### **Introduction to the Study of Social Sciences I - II Six Credits**

The course examines human society, including the individual and his or her relation to society, collective behavior, as well as Puerto Rico and its relation to the social and historical development of Western Civilization. Economic, psychological, sociological, anthropological and political problems of the contemporary world are discussed.

### **SOSC 320**

#### **Social Research Techniques Three Credits**

The course presents research methods and techniques for the social sciences.

### **SPAN 111**

#### **Reading in Spanish Three Credits**

Study and analysis of written texts: comprehension interpretation, vocabulary in context, central idea afterthought in reading, reading, ideas relation kinds of discourses, attitudes and purpose of the author. Beginning in the drafting process from the sentence of the paragraph through the grammatical structures of syntax spelling and punctuation marks. The course focuses in the discussion, reflections and critical analysis of reading and spelling of short paragraphs. Includes laboratory exercises.

### **SPAN 112**

#### **Reports Writing in Spanish Three Credits**

The course focuses in the reports writing in Spanish to complete forms related to the public security systems. With this approach, the course pretense students build coherent, cohesive and adequate descriptions through coherent cohesive and adequate descriptions through written and oral reports, arguments, critical reflections, investigations and short essays supported by technology.

**SPAN 151**

**Introduction to Language**

**Three Credits**

Spanish 151 is a basic course that will cover the following themes: origin, evolution, and characteristics of Puerto Rican and Hispano-American Spanish, orthography, oral expression, and reading comprehension.

**SPAN 152**

**Introduction to Reading and Writing**

**Three Credits**

Spanish 152 is a basic course that will cover the following themes: morphosyntax, punctuation, and includes an introduction to writing.

Requisite: SPAN 151

**SPAN 250 @**

**Writing Techniques**

**Three Credits**

Emphasizes the development of the skills needed to write logically and correctly, including research techniques.

Requisites: SPAN 151-152

## SCHOOL OF TECHNICAL PROGRAMS

### VISION

The vision of the School of Technical Studies and Continuing Education (STSCE) is to make the Ana G. Méndez University System (SUAGM) the first choice and the model for technology education and continuing education programs.

The STSCE will become an important component of support to strengthen the undergraduate enrollment at SUAGM and its institutions.

### MISSION

The mission of the School of Technical Programs and Continuing Education is to offer high quality education in technology. The students will be able to pursue a university technical certificate or an associate degree and will receive the proper training to satisfy the employment market. The STSCE programs are committed to providing the students with life-long and technical skills needed to find a job for their professional development, or to continue studies at the university level.

### OBJECTIVES

In order to accomplish our mission, the School must comply with the following objectives:

1. Provide technical education that will respond to the present and future demands of the employment markets.
2. Train and develop in the students the skills and knowledge related to their profession, in accordance with the demands of the human resources of the community we serve.
3. Provide support services that will facilitate student retention in the program and that will contribute to academic and professional success.
4. Develop in the students the necessary skills and attitudes needed in the use of learning resources, including recent developments in the area of educational technology.
5. Provide students with real life laboratory experiences, so that they will familiarize themselves with the nature of their future job.
6. Develop students' competence in small business management, so that they are prepared to create

employment for themselves as well as for other persons.

7. Develop proposals and continuing education courses that can be offered in different modalities at the workplace or at home.
8. Incorporate emergent technologies in technical studies programs and continuing education, according to the available resources.
9. Offer technical programs and continuing education at the off-campus centers that will respond to the necessities of the geographic zone and communities they serve.

### ADMINISTRATIVE STAFF

**José R. Del Valle-Rodríguez** / Assistant Vice President & Dean

**María Elena Flores-Aponte** / Associate Dean

**Vivian Cordero** / Academic Coordinator

**Vacant** / Integrated Services Coordinator

**María de los A. Rodríguez** / Administrative Assistant

**Virmarie Flores** / Administrative Assistant

### FACULTY

**Nancy Sánchez** / Lecturer  
MA, Universidad Metropolitana  
BS, Biology, Interamerican University

**Angel Alvarez Concepción** / Lecturer  
MVA, EDP College

**Wilfredo Centeno** / Lecturer  
MBA, Management, Universidad del Turabo

**Nelly Figueroa** / Lecturer  
MBA, Human Resources, Universidad del Turabo

**Mayra Cummings** / Lecturer  
MS, Medical Technology, Interamerican University  
BS, Interamerican University

**Héctor Osuna** / Lecturer  
BS, Animal Health Tech., University of Puerto Rico,  
Mayaguez  
MBA, Management, Universidad Metropolitana

**Eva Veguilla Flores** / Lecturer  
MEd, Universidad del Turabo

## PROGRAMS OF STUDY

### CERTIFICATE IN COMPUTERIZED SYSTEMS

The courses required for this certificate offer the students the essential knowledge to work with software programs in a business setting. The students master the technical skills of the computer keyboard as a basis for working rapidly and effectively with the application programs. The students become familiar with the following software programs: Word, Excel, Power Point, and Access, among others.

#### OBJECTIVES

At the conclusion of the certificate program, the students will be able to:

1. Demonstrate knowledge of the concepts, applications and uses of computers as important tools for information processing in the office setting.
2. Produce different styles of business documents with speed and accuracy.
3. Use correctly various computer software packages such as Word, Excel and Power Point.
4. Apply proofreading skills to the editing of documents.

<b>Total Credits</b>		<b>39</b>
ACCO 100	Introduction to Accounting	3
COAP 103	Programming Principles	3
COAP 104	Databases	3
COAP 106	Computer Networks	3
COAP 107	Keyboarding and Basic Computer Applications	4
COAP 202	Programming C++	4
COAP 203	Programming in Visual BASIC	4
COAP 204	Systems Analysis and Design	3
COAP 205	Systems Development Project	3
ENGT 001	Introduction to English I	3
MATH 010	Basic Mathematics	3
SPAT 001	Introduction to Spanish I	3

### CERTIFICATE IN INFORMATION PROCESSING FOR MEDICAL BILLING

This certificate will prepare support personnel to collaborate with medical personnel according to the laws in Puerto Rico.

#### OBJECTIVES

At the conclusion of the certificate program, the students will be able to:

1. Demonstrate knowledge in the concepts, applications and uses of the computers as an important tool in information processing.
2. Apply the basic elements of medical terminology in the elaboration of words using roots, prefixes, suffixes, and compounds.
3. Demonstrate the skills necessary in completing HCFA forms and mastering the insurance claims form cycle.

<b>Total Credits</b>		<b>38</b>
ACCO 100	Introduction to Accounting	3
COAP 107	Keyboarding and Basic Computer Applications	4
ENGT 001	Introduction to English I	3
MANA 100	Business Administration Theories	3
MATH 010	Basic Mathematics	3
OFAD 002	Medical Terminology of Systems, Organs and Human Body Functions	3
OFAD 006	Administrative Procedures for Medical Offices	3
OFAD 008	Billing Systems for Health Care Procedures	3
OFAD 022	Disease, Coding & Medical and Dental Procedures	3
OFAD 024	Electronic Billing	3
OFAD 025	Theory and Practicum in a Medical Facility	3
SPAT 001	Introduction to Spanish I	3

### PARALEGAL TECHNICIAN CERTIFICATE

The Paralegal Technician Certificate Program trains the students to provide support services to lawyers, judges, investigators and other legal professionals.

#### OBJECTIVES

At the conclusion of the certificate program, the student will:

1. Demonstrate knowledge and skills in legal research and writing.
2. Prepare their own documents using research skills and necessary legal terminology in Spanish, English and Latin.
3. Utilize computer software in legal research.
4. Be familiar with the original client interview, the drafting of the complaint, the summons, and all the

other stages of civil procedures in the Puerto Rican judicial system.

<b>Total Credits</b>	<b>43</b>
COAP 107 Keyboarding and Basic Computer Applications	4
CRIM 015 Evidence	3
CRIM 030 Strait Penal and Special Penal Law	3
PALE 010 Mortgage Law	
PALE 011 Civil Procedures	3
PALE 012 Ethics and Professional Responsibility	3
PALE 015 Legal Research	3
PALE 020 Public Law	3
PALE 025 Private Law	3
PALE 035 Preparation & Analysis of Cases	3
PALE 075 Practicum	3
POSC 085 Civil Rights in Puerto Rico	3
PSYC 005 Personal, Academic and Labor Development	3
SPAT 001 Introduction to Spanish	3

### ASSISTANT TEACHER CERTIFICATE IN EARLY CHILDHOOD EDUCATION

This certificate provides students with the activities, information, and the necessary strategies to assist the pre-school teacher in the classroom.

#### OBJECTIVES

At the end of the certificate program, the students will be able to:

1. Identify the characteristics of early childhood, patterns of development and growth in physical, social, intellectual and emotional aspects.
2. Discuss current legislation related to the operation of preschool facilities.
3. Use play and game activities as teaching strategies in preschool education.

<b>Total Credits</b>	<b>60</b>
ENGT 001 Introduction to English I	3
MATH 010 Basic Math	3
PRES 002 Health, Hygiene and Nutrition	3
PRES 022 Development of Language and Speech Correction	3
PRES 035 Introduction to Education	3
PRES 071 Growth and Human Development	3
PRES 072 Educational Psychology	3
PRES 076 Classroom Management	3
PRES 102 Teaching Materials and Learning Devices	3
PRES 107 Teaching Reading and Writing	3
PRES 114 Computers in Education	3
PRES 119 Theory, Practices and Game-like Education Strategies	3

PRES 123 Children's Literature	3
PRES 136 Curriculum and Teaching Methods	3
PRES 139 Education for Exceptional Children	3
PRES 144 Administration of Educational Programs for Infants, Toddlers and Preschool Children	3
PRES 143 Practical Experiences at Preschool Level for Assistant of Teachers	3
PRES 166 Child Care in Early Education	3
PSYC 005 Personal, Academic and Labor Development	3
SPAT 001 Introduction to Spanish I	3

### LICENSED PRACTICAL NURSE CERTIFICATE

This professional can perform simple tasks in medical procedures such as: observations of the condition of the patient, physical, mental, social and spiritual well-being development plans of care for the patient, documenting its intervention in the clinical record and basic tasks related to hygiene, comfort, feeding, elimination, ambulation and patient rest.

<b>Total Credits</b>	<b>54</b>
COAP 107 Keyboarding and Basic Computer Applications	4
ENGT 001 Introduction to English I	3
MATH 010 Basic Mathematics	3
NURT 001 Introduction to Microbiology	3
NURT 002 Principles of Nursing	5
NURT 002 L Clinical Laboratory on Principles of Nursing	0
NURT 003 Nutrition Fundamentals	2
NURT 004 Primary Nursing Care of Mothers and Newborns	5
NURT 004 L Clinical Laboratory of Primary Nursing Care of Mothers and Newborns	0
NURT 005 Primary Nursing Care for Children and Adolescents	5
NURT 005 L Clinical Lab. of Primary Nursing Primary Care for Children and Adolescents	0
NURT 006 Nursing Primary Care of the Adult and the Elderly	5
NURT 006 L Clinic Lab. of Primary Nursing Care of Adults and the Elderly	0
PHAT 001 Principles of Human Anatomy and Physiology	3
NURT 007 Primary Nursing Care of the Psychiatric Patient	5
NURT 007 L Clinical Lab. In Primary Nursing Care of the Psychiatric Patient	0
NURT 008 Practical Nurse in the Community	2
NURT 009 Practical Nurse Review	3
PSYC 005 Personal, Academic and Labor Development	3
SPAT 001 Introduction to Spanish I	3

**CERTIFICATE IN PHARMACY TECHNICIAN**

<b>Total Credits</b>		<b>51</b>
COAP 002	Keyboarding & Basic Applications in Computers	3
PHAT 002	Pharmaceutical Calculations	4
PHAT 006	Over the Counter Medicines	3
PHAT 016	Pharmacotherapy I	4
PHAT 017	Introduction to Pharmacy	3
PHAT 018	Pharmacotherapy II	4
PHAT 019	Pharmacy Administration and Legislation	3
PHAT 020	Posology	3
PHAT 021	Pharmacy Chemistry	3
PHAT 022	Farmacognosia	3
PHAT 023	Communication and Customer Service	3
PHAT 024	Practical Lab	3
PHAT 025	Internship I	6
PHAT 026	Internship II	6

**ASSOCIATE DEGREE IN RESPIRATORY THERAPY**

<b>Total Credits</b>		<b>62</b>
MATH 120	Elementary Algebra	3
SPAN 152	Fundamentals of Reading and Writing	3
ENGL 152	Fundamentals of Reading and Writing	3
FSET 100	Freshman Seminar	3
BIOL 103	Survey of Biological Sciences	3
BIOL 300	Microbiology	3
BIOL 300L	Microbiology Lab	1
PHSC 101	Introduction to Physics	3
CHEM 101	Applied Chemistry	3
CHEM 101L	Applied Chemistry Lab	1
RESP 100	Introduction to Respiratory Care	3
RESP 101	Cardiopulmonary Anatomy and Physiology	3
RESP 102	Principles of Respiratory Therapy	3
RESP 202	Cardiopulmonary Pathophysiology	3
RESP 203	Respiratory Therapy Pharmacology	3
RESP 204	Respiratory Management	3
RESP 205	Diagnostic Evaluation in Respiratory Care	3
RESP 206	Sample of Blood Gases and Function	2
RESP 207	Mechanical Ventilation	3
RESP 208	Neonatal and Pediatric Patient Management	3
RESP 209	Practicum	4
RESP 210	Knowledge Integration in Respiratory Therapy	3

**ASSOCIATE DEGREE IN NURSING**

<b>Total Credits</b>		<b>60</b>
MATH 120	Elementary Algebra	3
BIOL 103	Survey of Biological Sciences	3
PSYC 123	Psychology Survey	3
SPAN 152	Fundamentals of Reading and Writing	3
ENGL 152	Fundamentals of Reading and Writing	3
FSET 100	Freshman Seminar	3
BIOL 300	Microbiology	3
BIOL 300L	Microbiology Lab	1
BIOL 303	Human Biology I	3
BIOL 303L	Human Biology I Lab	1
NURS 100	Fundamentals of Nursing	5
NURS 100L	Fundamentals of Nursing Lab	0
NURS 104	Pharmacology	4
NURS 106	Medical Surgical Nursing	5
NURS 106L	Medical Surgical Nursing Lab	0
NURS 108	Maternal & Child Nursing	5
NURS 108L	Maternal & Child Nursing Lab	0
NURS 110	Mental Health Nursing	5
NURS 110L	Mental Health Nursing Lab	0
NURS 112	Nursing Care of Children and Adolescents	5
NURS 112L	Nursing Care of Children and Adolescents Lab	0
NURS 114	Nursing Care of The Adult	5
NURS 114L	Nursing Care of The Adult lab	0

**ASSOCIATE DEGREE IN PHARMACY TECHNICIAN**

<b>Total Credits</b>		<b>66</b>
BIOL 103	Survey of Biological Sciences	3
SPAN 152	Fundamentals of Reading and Writing	3
PSYC 123	Psychology Survey	3
ENGL 152	Fundamentals of Reading and Writing	3
FSET 100	Freshman Seminar	3
BIOL 100	Applied Microbiology	3
BIOL 100L	Applied Microbiology Lab	1
BIOL 303	Human Biology I	3
BIOL 303L	Human Biology I Lab	1
PATH 102	Pharmaceutical Calculations	3
PHAT 116	Pharmacotherapy I	3
PATH 117	Pharmacy Introduction	2
PATH 121	Pharmaceutical Chemistry	3
PATH 122	Pharmacognosy	3
PATH 206	Over The Counter Medicine	3
PATH 218	Pharmacotherapy II	3
PATH 219	Pharmacy Law and Administration	3
PATH 220	Dosage	3
PATH 223	Communication and Customer Service Pharmacist	2
PATH 224	Pharmacy Practice Laboratory	3
PATH 225	Internship I	3
PATH 226	Internship II	3

**COURSE DESCRIPTONS**

**ACCO 100**

**Introduction to Accounting**

**Three Credits**

The course presents the basics of accounting needed in the workplace. It includes the nature and purpose of basic accounting procedures, internal control, planning the use and purpose of payroll, and the accounting cycle in an enterprise. Three hours per week.

**ART 017**

**Art Appreciation**

**Three Credits**

This course introduces the students to art appreciation and architecture. It includes an introduction to the arts, aesthetic organization, and a variety of architectural and artistic masterpieces. Three hours per week.

**COAP 103**

**Programming Principles**

**Three Credits**

The main approach of this course is to provide students the essential foundations to understand the new bases of communication technologies. Students are offered a firm introduction to the connectivity of networks. In this way, they will gain an understanding of the different forms of networks and components that constitute (LAN) local networks, (WAN) extended networks, (MAN) metropolitan networks, and other common types of networks.

**COAP 104**

**Databases**

**Three Credits**

The course is an introduction to the concepts and applications of databases. Students will learn to create and manage database programs, data files, and produce documents and reports. Three hours per week.

Requisite: COAP 107

**COAP 106**

**Computer Networks**

**Three Credits**

This course in telecommunications and computer networks is designed for individuals in the field of computerized information systems. The historical development, concepts, terminology and modern products related to computer networks are described. Criteria for planning, acquisition and installation of computer networks are emphasized. It also includes the study of protocols, software, topologies, and products available. Strategies of centralized and distributed processing are compared.

Requisite: COAP 107

**COAP 107**

**Keyboarding and Basic Computer Applications**

**Four Credits**

This course introduces students to the electronic alphanumeric keyboard system. The course will provide basic skills to those students who will need to operate a computer terminal keyboard, and allow them to input information into a computer in a swift and efficient manner. This course also introduces the students to the basic concepts and applications of spreadsheet and graphic presentations. The students will learn to use various electronic spreadsheet applications, as well as create documents such as brochures, bulletins, graphic and other types of presentations. Four hours per week.

**COAP 202**

**Programming in C++**

**Four Credits**

Through the study of the programming language of C++, the course analyses how to solve problems that are described initially in general terms. In an organized way, the student will learn how to sketch and outline C programs. The numerous problems and sample exercises included in the course will permit the student to clarify concepts and details.

**COAP 203**

**Programming in Visual BASIC**

**Four Credits**

The course centers on the study of the theory and practice of the language of BASIC. It includes the elements of the language for handling entrance and exit components, arithmetic, logic, structure, codification, test, correction of logic and syntax errors and use of the interpreters of the language. The applications developed will be based on a commercial approach, without dismissing their use in management and statistical processes.

**COAP 204**

**Systems Analysis and Design**

**Three Credits**

The course analyzes principally commercial situations, using the correct steps of the process. It also centers on the determination of requirements for system analysis, among them, designs of a system, implantation, and selection of equipment and programs.

**COAP 205**

**Systems Development Project**

**Three Credits**

Students will develop an implementation project with a commercial approach. They will consider all the aspects: situation analysis, design, test, revision, as well as

programming, using the languages they have learned. Students will apply the concepts for designing and implanting computerized systems, in agreement with the requirements of a modern system.

### **CRIM 015**

#### **Evidence**

#### **Three Credits**

The course presents the rules of evidence and their applications in criminal cases. Techniques of presentation of evidence, preparation of evidence, preparation of cases, and court testimony will be studied. Three hours per week.

### **CRIM 030**

#### **Strait Penal and Special Penal Law**

#### **Three Credits**

Students will study and analyze the General Part of the Puerto Rico penal code and some of the most important crimes in the Special Part of the code, as well as some of the most important Special Criminal Law Statutes. The historical background of the Puerto Rico penal code and of the Special Criminal Law Statutes, as well as the general principles of law applicable to them, will be examined. Leading jurisprudence relevant to the topics discussed will be read and discussed in class. Three hours per week.

### **ECOT 001**

#### **Economic Fundamental**

#### **Three Credits**

Students will study methods, theories and practice of economics and its effects on the individual, the firm and society. Special emphasis will be placed on micro analysis of the individual decision-making economic units and the application of the theory and principles in managing public and private enterprises.

Requisite: MATH 010

### **ENGT 001**

#### **Introduction to English I**

#### **Three Credits**

This is a listening-speaking course in which students practice oral communication skills that can be put immediate use. Students will learn the appropriate language for different social and professional situations, including formal and informal speech. The curriculum has an audio-oral focus, moving from listening to a fuller command of integrated listening and speaking skills. Three hours per week.

### **ENGT 002**

#### **Conversational English I**

#### **Three Credits**

This is a communicative English course designed to develop the oral communication skills of basic-level students of English as a Second Language. It develops student's oral fluency by focusing on speaking and listening skills. Students are engaged in purposeful use of the language rather than learning about the language. Students will learn appropriate language for different social and professional situations, including informal and formal speech.

### **ETIC 010**

#### **Fundaments Ethics**

#### **Three Credits**

The nature of moral philosophy and the evolution of the principal ethics and bioethics theories will be analyzed. The professor and students will jointly discuss and analyze all theories. Three hours per week.

### **FSET 100**

#### **Freshman Seminar**

#### **Three Credits**

This course aims to strengthen the knowledge and basic skills at the personal, intellectual and technological necessary for effective performance in activities that lead to academic performance and adjustment to college life. Students will participate in mentoring activities aimed at the acquisition of skills and knowledge that will allow its development in the academic area. The importance of comprehensive development of man and its relationship to academic success. The student is guided through a series of activities on campus to expose the services offered by our institution and the School of Professional Technicians. It is intended that students develop greater security and confidence to manage and resolve academic and personal situations.

### **GEOG 025**

#### **Geography Puerto Rico**

#### **Three Credits**

Basic notions of general geography and related sciences. The location of America in relation to other continents, as well as the situation of Puerto Rico within the America's are major topics of study. Several aspects of physical and human geography of Puerto Rico are studied, among them the island's topography, hydrography, climate, ethnic composition, folklore and demographic growth. Three hours per week.

**INET 001**

**Introduction to Enterprises**

**Three Credits**

This course is designed to provide students with understanding and overview of the business world. The student will develop analytical skills while being exposed to a variety of alternatives in a business career. This includes the establishment, acquisition and development of a business.

**MANA 100**

**Business Administration Theory**

**Three Credits**

The course is based in the studies of concepts in the administrative atmosphere of companies in three perspectives: the director, guidance and administration. It includes the concept of personnel management in the 21st century as the mayor source of competitive advantage and valuation of the business in the market. Basic topics such as the process of planning principles, organization, direction and controls carried out by means of functions extended in different levels increasing the success and the competitiveness in the market are discussed.

**MATH 010**

**Basic Mathematics**

**Three Credits**

This course fulfills student needs in mathematics. It includes practice in the following skills: numeral operations with cardinal numbers, fractions, decimals, percent, and whole numbers. Three hours per week.

**NURS 100**

**Fundamentals of Nursing**

**Five Credits**

This theoretical and clinical course provides an introduction to the historical, sociopolitical, and legal concepts of the nursing profession in US, Puerto Rico and other Hispanic communities. Emphasis is given to the development of nursing basic skills which are needed for the health promotion and maintenance of individuals, families and communities. The student is guided to consider the individuals motivation in seeking health care and how their problems interfere with daily activities. Clinical practice provides opportunities for the development of the necessary skills used in hospital and community settings to carry out the nursing role. Emphasis is placed on the client as a holistic being and the use of critical thinking when intervening in health and illness with a variety of individual's from different cultural/social backgrounds, and different age groups.

**NURS 104**

**Pharmacology**

**Four Credits**

This course presents students with the opportunity to develop critical thinking related to pharmacology concepts applied to the nursing process. The content focuses on principles of pharmacology, drug classifications, administration routes, dosage calculations, therapeutic use, disinfection procedures, basic concepts of nontraditional medicine and drug interactions. Discussion of advantages and disadvantages of pharmacotherapy and the patient's well-being. In addition, includes content on bioterrorism agents, drugs for HIV/AIDS, medication errors and gene therapy.

Requisite: NURS 100

**NURS 106**

**Medical Surgical Nursing**

**Five Credits**

This theoretical and clinical course prepares the students to intervene with individuals in the adult and elderly stages, who present physiological alterations that affect their homeostasis. The focus is directed towards the development of knowledge based on application of the nursing process, communication skills, critical thinking and therapeutic interventions as essential to ensure an optimal care. The course includes theory, nursing skills laboratory, clinical experiences (hospitals & communities) and seminars. The hospitals used for clinical practice are at secondary and tertiary levels of care.

Requisites: NURS 100, NURS 104

**NURS 108**

**Maternal and Child Nursing**

**Five Credits**

This theoretical and clinical course focuses on concepts of the childbearing patient, her infant and the impact in her family. The nursing process is presented as a guide for intervention with families during the normal human development process including: pregnancy, delivery, post-partum and care of the newborn. Health promotion is emphasized. Epidemiology, infectious, acute and chronic diseases are discussed taking into consideration maternal and newborn's needs in community and hospital care settings from a bio psychosocial perspective. At the beginning of the course, specific maternal and childcare skills are practiced in a nursing skills laboratory. After this practice, students participate of different experiences in the clinical setting.

Requisites: NURS 100, NURS 104

**NURS 110**  
**Mental Health Nursing**  
**Five Credits**

The focus of this theoretical and clinical course is the promotion of health and provision of opportunities for clients to maximize their ability to live, work, socialize, and learn in the communities of their choice. The practice of mental health nursing is presented from the perspective of helping people manage difficulties, solve problems, decrease emotional pain, and promote growth, while respecting their rights to their own values, beliefs and decisions. Nursing students are encouraged to engage in self-analysis in order to increase their understanding and self-acceptance. This is important because nurses who are able to clarify their own beliefs and values are less likely to be judgmental or to impose their own values and beliefs on clients. Neurobiological, psychosocial, sociological and spiritual theories are discussed to help students understand clients and their experiences and to help them engage in the healing process. Emphasis is given to development of effective communications skills, application of the nursing process, community mental health, critical thinking and cultural diversity.

Requisites: NURS 102, NURS 104

**NURS 112**  
**Nursing Care of Children and Adolescents**  
**Five Credits**

This theoretical and clinical course focuses on the care of children and adolescents. The student is introduced to the concepts of nursing care from the first year of life to the adolescence. Nursing basic skills are developed for the prevention of illness, health promotion and health maintenance in this age group. Emphasis is placed on the client as a holistic being, applying critical thinking and promoting the use of nursing diagnosis according to North American Nursing Diagnosis Association (NANDA) with nursing interventions (NIC) and outcomes (NOC) adequate to this age group.

Requisites: NURS 106, NURS 108

**NURS 114**  
**Nursing Care of the Adult**  
**Five Credits**

This course is based on the principles inherent in caring for individuals, families and communities at different stages of growth and development, emphasizing the basic needs interfered in the adult and the old. We discuss the physiological and pathological changes that occur in the various systems in a holistic manner. This course involves the application of the skills that the student to master, using the nursing process for interaction with the adult and old, his family and community. During all psychomotor skills

are emphasized nursing intervention preventive, curative and rehabilitative to meet the health needs of a dynamic and changing community. Emphasis is placed on the scientific principles of each procedure and the development of skills to perform the techniques correctly.

Requisites: NURS 106, NURS 108

**NURT 001**  
**Introduction to Microbiology**  
**Three Credits**

An introduction to the microbial world including the basic characteristics of fungi, bacteria and viruses. Special emphasis is placed on microorganisms pathogenic to humans.

**NURT 002**  
**Principles of Nursing**  
**Five Credits**

This course is designed to develop the knowledge base and the basic nursing skills to enable the learner to perform satisfactorily during the course and also in future clinical experience. The fundamentals of nursing care and basic skills are discussed so that learner can lead the client towards the satisfaction of his basic needs such as hygiene, physical and psychological comfortless, safety, prevention and control of infections.

**NURT 003**  
**Nutrition Fundamentals**  
**Two Credits**

Discussion of nutrition with emphasis on the role of carbohydrates, fiber, proteins, fats, vitamins and minerals in the human body. We evaluate the interrelationship between nutrients and health. Reflects critically on the feeding to be in a better quality of life as proposed by the food pyramid. The nutritional content of processed foods versus processed data and not sore nutritional legislation are included in the theme of the course. It develops from conference, research and cooperative work.

**NURT 004**  
**Nursing Primary Care to the Mother and the Newborn**  
**Five Credits**

This course consists of applying the skills they need to be proficient in practical nursing student, using the nursing process for the interaction of the pregnant woman and her family last stages of pregnancy, childbirth and postpartum. It emphasizes the involvement of nursing preventive, curative and rehabilitative, filling the health needs of a dynamic and changing community. Includes skills needed in the nursing intervention with the newborn in delivery room and living room (nursery). In addition, we selected those skills applicable in patients with gynecological conditions,

emphasizing its self-care. Clinical practice will be made in care institutions offering primary, secondary, tertiary and others that provide community service in this group of patients.

Requisites: NURT 001, NURT 002, PHAT 001, NURT 010

#### **NURT 005**

##### **Nursing Primary Care to the Child and Adolescent Five Credits**

In this course the student will practice skills learned in the care of children and adolescents and executed according to stages of growth and development of children, applying the nursing process, for intervention with children, adolescents, family and community. It emphasizes the involvement of nursing preventive, curative and rehabilitative. It also integrates the principles of teaching-learning and effective communication in the speech he makes. The student will apply the process of communication and interpersonal skills to intervene effectively with the infant, child, adolescent and family, in coordination with the health team.

Requisites: NURT 001, NURT 002, NURT 010, PAHT 001

#### **NURT 006**

##### **Nursing Primary Care to the Adult and the Elderly Five Credits**

This course is designed to develop the knowledge and skills in the nursing care of the adult and the elderly. The learner is presented with the physiological and pathological changes that occur holistically in the different systems that affect the adult and the elderly, their families and the community. The course includes three (3) lecture hours and six (6) hours of clinical practice a week, where the learner is able to put in practice his knowledge base and skills in a variety of settings under the supervision of a professor.

Requisites: NURT 001, NURT 002, NURT 004, NURT 005, NURT 010

#### **NURT 007**

##### **Nursing Primary Care in the Psychiatric Patient Five Credits**

This course is designed to develop the nursing basic care skills in psychiatric nursing. Medical-legal aspects of mental health care are also discussed. It focuses on the alterations in mental health such as stress and crisis intervention, anxiety, somatomorphic, cognitive, affective, schizophrenic, auto-destructive, and eating disorders. Suicide,

#### **NURT 008**

##### **Practice Nurse in the Community Two Credits**

This course provides students with knowledge and appreciation of aspects of management and leadership in nursing. Use critical thinking through discussion and group dynamics, in addition, oral and written activities related to the course content. We discuss the roles of professional nursing leadership, the criteria for continuing education and graduate studies. Promotes communication skills essential to perform the roles required by the nursing profession.

#### **NURT 009**

##### **Practical Nurse Review Three Credits**

This course is designed to assist students in preparing to take one of the most important tests they have taken. This is a test in which the state assesses the minimum that must have a nurse or practice nurse to practice safely. Approve it represents a guarantee for the health of the people. But it also represents evidence of talent, commitment and desire to serve, characteristics that distinguish a true professional.

Requisites: NURT 003, NURT 004, NURT 005

#### **OFAD 002**

##### **Medical Terminology of Human Systems, Organs and Body Functions Three Credits**

The course presents medical terminology used in laboratories, by radiologists, and in prescriptions. It also studies the basic elements of medical terminology in the elaboration of words using roots, prefixes, suffixes, and compounds. It includes definitions and vocabulary related to terminology used in the health professions. Three hours per week.

#### **OFAD 006**

##### **Administrative Procedures for Medical Offices Three Credits**

This course is designed to provide students with advanced knowledge in word processing. Students review how to create, edit and print a document, and to format commands to create a multi-page document. The students learn to merge documents, create reports and basic desktop publishing. Four hours per week.

#### **OFAD 008**

##### **Billing Systems for Health Care Procedures Three Credits**

The course presents the dynamics of medical billing and collections. Areas covered include completing HCFA forms and mastering the insurance claim form cycle. Practical

information will be given on the features that are common to all insurance carriers and features specific to Medicare, Medicaid, Blue Cross/Blue Shield, and others. Three hours per week.

**OFAD 022**

**Coding of Diseases, Medical and Dental Procedures  
Three Credits**

Classification of diseases and ambulatory procedures using numeric coding. Three hours per week.

**OFAD 024**

**Electronic Billing  
Four Credits**

The course presents medical billing and collections using a computer software package. It will provide the skills necessary for completing HCFA forms and mastering the insurance claims form cycle. Practical information will be given on the features that are common to all insurance carriers and features specific to Medicare, Medicaid, Blue Cross-Blue Shield and others. Three hours per week.

Requisites: OFAD 002, OFAD 008, OFAD 022

**OFAD 025**

**Practice and Theory in Medical Facilities  
Three Credits**

The course offers the student the opportunity to apply the knowledge already acquired in the academic program in a real work environment. The student will work 4 days of the week in a practice center and his or her performance will be evaluated by the assigned supervisor in the practice center. One day a week, the student will meet with the practice coordinator to discuss the work done, his or her performance and experiences and to identify any areas that need reinforcement.

Requisites: OFAD 002, OFAD 008, OFAD 022

**OFAD 042**

**Word Processing II  
Four Credits**

The course offers practical information and hands-on experience using current word processing software packages. Students practice document preparation and functions such as: creating tables, columns, merge, macros, page headers, and footers. Four hours per week.

Requisite: OFAD 001

**PALE 010**

**Mortgage Law  
Three Credits**

This course will introduce the paralegal technician to the general principles of the mortgage law and regulations. Special study will be given to the daily operations of the

Property Registry and the role the paralegal technician plays in its operations. Title searches, filing of documents, fees other practical details will be discussed. Leading jurisprudence about specific topics regarding mortgage law and of the property register will be read and discussed in class. Three hours per week.

**PALE 011**

**Civil Procedures  
Three Credits**

The course presents the most important stages in civil procedure rules as used in our legal system. Students will be trained in the original client interview, the drafting of the complaint, the summons, and all the other stages of civil procedure. The second part of the course will introduce the most important stages in the Criminal Procedure Rules, beginning with the arrest, the determination of probable cause for arrest, and so on. Leading jurisprudence on the important topics studied will be read and discussed in class. Three hours per week.

**PALE 012**

**Professional Conduct Code  
Three Credits**

The course discusses the responsibilities of members of the legal profession to comply with the code of professional conduct in all legal processes in society. The student will learn the obligation of all lawyers or citizens acting as judge, district attorney, and advisor or in any other capacity, to act in accordance with the regulations of the code of professional.

**PALE 015**

**Legal Research  
Three Credits**

In this course students will learn the theory of legal sources and the methodology of legal research. They will study the structure, utility and citation of the main bibliographic references: primary, secondary and legal findings. The study and practice of writing legal documents will complete students' academic preparation to become researchers in the field of law.

**PALE 020**

**Public Law  
Three Credits**

Students will learn public law through the study of administrative law, the discipline that studies the genesis, development, organization, and power of administrative agencies, as well as the norms that guide the processes of: investigation, regulations and judgment of those organisms. They will also study different forms of administrative discretion through procedural norms, judicial principles and constitutional statutes, guided to protect the citizen and

commerce against the arbitrary acts of administrative agencies.

**PALE 025**

**Private Law**

**Three Credits**

Students will learn about family law, contracts and obligations, and the rights of inheritance. They will understand the judicial concepts of person, legal capacity, marriage and its effects, properties, obligations, contracts, inheritance and legacy.

**PALE 035**

**Preparation and Analysis of Cases**

**Three Credits**

The student will examine the fundamental stages in the preparation of a case. In general terms, the student will learn to carry out a research study of the events, evidence, trial, and judgment of a case.

**PALE 075**

**Practicum**

**Three Credits**

The course offers students the opportunity to apply knowledge already acquired in the academic program in a real work environment. Students will work 4 days a week in a practice center and individual performance will be evaluated by the supervisor assigned in the practice center. One day of the week, the student will meet with the practicum coordinator to discuss the work done, performance and experiences and to identify any areas that may need reinforcement.

Requisite: POSC 085, CRIM 030, PALE 011, PALE 012, PALE 015, PALE 025

**PATH 102**

**Pharmaceutical Calculations**

**Three Credits**

Review of basic math concepts that are carried out daily in the practice of the profession. Discuss the concept of ratio and proportion, estimation and significant figures, as well as the method for augmentation and reduction formulas, preparations and expressed the percent dilution and concentration. Emphasis in the International System of Units, the Common System and the System Apothecary Avoirdupois, and equivalents that are used to convert between them. Basic mathematical operations are performed and their application to quantitative problem solving as part of professional roles in both community pharmacy, chain, such as institutional and industrial areas.

**PATH 116**

**Pharmacotherapy I**

**Three Credits**

Fundamental concepts of Sciences focused on the characteristics of matter, the cell, the introduction to Human Anatomy and Physiology. Study of different systems and organs of human body from the standpoint of structural and functional. Presents fundamental concepts of structure and function of human body, conditions and treatments integumentary system, musculoskeletal and nervous. Emphasis on the treatment of conditions affecting various body systems and the most commonly used drugs belonging to different categories based on their clinical application. Including contraindications, precautions, warnings, interactions, pharmacokinetics, pharmacodynamics, dosage and side effects of drugs.

**PATH 117**

**Pharmacy Introduction**

**Two Credits**

Study of the origin and evolution of pharmacy. It includes discussion of basic concepts and terminology of the occupation of pharmacy technician. Emphasis on prescription and important abbreviations used in the prescription and its meaning, as well as procedures for handling and shipping thereof. Includes presentation forms of medicine, common synonyms and other preparations.

**PATH 121**

**Pharmaceutical Chemistry**

**Three Credits**

Study of the physicochemical properties and behavior of pharmaceutical products, as well as their interaction in biological systems. This course studies the organic functional groups related to pharmaceutical compounds, the main types of medications, their structure, distribution, adsorption and metabolic pathways.

**PATH 122**

**Pharmacognosy**

**Three Credits**

Study of drugs derived from natural products of plant, animal and mineral extraction and purification methods, chemical composition, therapeutic use and effects on the body. Includes drugs obtained by biosynthesis in pharmaceutical and medicinal plants from Puerto Rico.

**PATH 206**

**Over The Counter Medicine**

**Three Credits**

Discuss drugs available without a medical prescription, "over the counter medicines", which are used in the prevention or treatment of the most common conditions affecting humans. The use of equipment, devices and

common accessories available for sale in community pharmacies that are used for testing or monitoring of some common medical conditions or treatments. Includes a section on homeopathy because of the boom that it has acquired in recent years.

Requisite: PHAT 116

**PATH 218**  
**Pharmacotherapy II**  
**Three Credits**

Fundamental concepts of Sciences focused on the characteristics of matter, the cell, the introduction to Human Anatomy and Physiology. Study of different systems and organs of human body from the standpoint of structural and functional. Presents fundamental concepts of structure and function of human body, the conditions and treatment of the endocrine, circulatory, respiratory, digestive, urinary and reproductive. Emphasis in the treatment of conditions affecting various body systems and greater use drugs belonging to different categories based on their clinical application. Including contraindications, precautions, warnings, interactions, pharmacokinetics, pharmacodynamics, dosage and adverse effects of drug.

Requisite: PATH 116

**PATH 219**  
**Administration and Law Pharmacy**  
**Three Credits**

Study of state and federal laws governing research, development, manufacturing, packaging, marketing, sale and distribution of drugs and medical devices. Emphasis on the laws governing the exercise of the profession of pharmacy and the Pharmacy Technicians. Includes procedures for the physical organization of a pharmacy; requirements, equipment, licenses and permits. The process of purchase, receipt and collation of goods in and out of the prescription.

**PATH 220**  
**Dosage**  
**Three Credits**

Provides the necessary tools to introduce students to the fundamental concepts of the pharmacy related to the administration of medications and dosage forms for adult, pediatric. Includes equivalents and calculation of parenteral and insulin dose. Study of different routes of administration, special design features and management with its use.

Requisite: PATH 102

**PATH 223**  
**Communication and Customer Service Pharmacist**  
**Two Credits**

Presents the basics of effective communication both verbally and written, as well as the correct way to establish a cordial relationship between the Pharmacy Technician and patient, as with their colleagues. Acquaints students with aspects of self-esteem, personality, relationships, job search and interview.

**PATH 224**  
**Pharmacy Practice Laboratory**  
**Three Credits**

Case Study of the Pharmacy Technician functions related to the delivery of drugs. Development of skills in the use and handling of equipment and books required by law. Analysis of the prescription for release from the interpretation, product selection, extemporaneous preparations, labeling and packaging. It includes the responsibilities of the Pharmacy Technician in a hospital environment with emphasis on the most common drugs used in the hospital, techniques and sterile preparations and preventive measures to avoid errors in the process of preparation of a medicament.

Requisites: PATH 102, PATH 206, PATH 116, PATH 117, PATH 218, PATH 219, PATH 220

**PATH 225**  
**Internship I**  
**Three Credits**

Integration of knowledge and skills acquired in a real scenario that facilitate the development and strengthening internal core competencies to serve as a Pharmacy Technician future. The internship takes place in a community pharmacy, chain or institutional or a combination of these and it will be supervised by a licensed pharmacist duly authorized by the Pharmacy Examining Board, as stipulated in the Law # 247 Pharmacy Act Puerto Rico. Total hours required during the period is 500 hours.

Requisites: PATH 102, PATH 116, PATH 117, PATH 121, PATH 122, PATH 206

**PATH 226**  
**Internship II**  
**Three Credits**

Integration of knowledge and skills acquired in a real scenario that facilitate the development and strengthening internal core competencies to serve as a Pharmacy Technician future. The internship takes place in a community pharmacy, chain or institutional or a combination of these and it will be supervised by a licensed pharmacist duly authorized by the Pharmacy Examining Board, as stipulated in the Law # 247 Puerto Rico Pharmacy

Act . Total hours required during the period is 500 hours to complete the 1,000 hours required by the Pharmacy Examining Board as established by law and thus complete the requirements to be eligible for revalidation of Pharmacy Technician.

Requisite: PATH 225

**PHAT 002**  
**Pharmaceutical Calculations**  
**Four Credits**

Review of basic math concepts that are carried out daily in the practice of the profession. Discuss the concept of ratio and proportion, estimation and significant figures, as well as the method for augmentation and reduction formulas, preparations and expressed the percent dilution and concentration. Emphasis in the International System of Units, the Common System and the System Apothecary Avoirdupois, and equivalents that are used to convert between them. Basic mathematical operations are performed and their application to quantitative problem solving as part of professional roles in both community pharmacy, chain, such as institutional and industrial areas.

**PHAT 006**  
**Over The Counter Medicine**  
**Three Credits**

Discuss drugs available without a medical prescription, "over the counter medicines", which are used in the prevention or treatment of the most common conditions affecting humans. The use of equipment, devices and common accessories available for sale in community pharmacies that are used for testing or monitoring of some common medical conditions or treatments. Includes a section on homeopathy because of the boom that it has acquired in recent years.

Requisite: PHAT 016

**PHAT 016**  
**Pharmacotherapy I**  
**Four Credits**

Fundamental concepts of Sciences focused on the characteristics of matter, the cell, the introduction to Human Anatomy and Physiology. Study of different systems and organs of human body from the standpoint of structural and functional. Presents fundamental concepts of structure and function of human body, conditions and treatments integumentary system, musculoskeletal and nervous. Emphasis on the treatment of conditions affecting various body systems and the most commonly used drugs belonging to different categories based on their clinical application. Including contraindications, precautions, warnings, interactions, pharmacokinetics, pharmacodynamics, dosage and side effects of drugs.

**PHAT 017**  
**Pharmacy Introduction**  
**Three Credits**

Study of the origin and evolution of pharmacy. It includes discussion of basic concepts and terminology of the occupation of pharmacy technician. Emphasis on prescription and important abbreviations used in the prescription and its meaning, as well as procedures for handling and shipping thereof. Includes presentation forms of medicine, common synonyms and other preparations.

**PHAT 018**  
**Pharmacotherapy II**  
**Four Credits**

Fundamental concepts of Sciences focused on the characteristics of matter, the cell, the introduction to Human Anatomy and Physiology. Study of different systems and organs of human body from the standpoint of structural and functional. Presents fundamental concepts of structure and function of human body, the conditions and treatment of the endocrine, circulatory, respiratory, digestive, urinary and reproductive Emphasis in the treatment of conditions affecting various body systems and greater use drugs belonging to different categories based on their clinical application. Including contraindications, precautions, warnings, interactions, pharmacokinetics, pharmacodynamics, dosage and adverse effects of drug.

Requisite: PHAT 016

**PHAT 019**  
**Administration and Law Pharmacy**  
**Three Credits**

Study of state and federal laws governing research, development, manufacturing, packaging, marketing, sale and distribution of drugs and medical devices. Emphasis on the laws governing the exercise of the profession of pharmacy and the Pharmacy Technicians. Includes procedures for the physical organization of a pharmacy; requirements, equipment, licenses and permits. The process of purchase, receipt and collation of goods in and out of the prescription.

**PHAT 220**  
**Dosage**  
**Three Credits**

Provides the necessary tools to introduce students to the fundamental concepts of the pharmacy related to the administration of medications and dosage forms for adult, pediatric. Includes equivalents and calculation of parenteral and insulin dose. Study of different routes of administration, special design features and management with its use.

Requisite: PHAT 002

**PHAT 021**  
**Pharmaceutical Chemistry**  
**Three Credits**

Study of the physicochemical properties and behavior of pharmaceutical products, as well as their interaction in biological systems. This course studies the organic functional groups related to pharmaceutical compounds, the main types of medications, their structure, distribution, adsorption and metabolic pathways.

**PHAT 022**  
**Pharmacognosy**  
**Three Credits**

Study of drugs derived from natural products of plant, animal and mineral extraction and purification methods, chemical composition, therapeutic use and effects on the body. Includes drugs obtained by biosynthesis in pharmaceutical and medicinal plants from Puerto Rico.

**PHAT 023**  
**Communication and Customer Service Pharmacist**  
**Three Credits**

Presents the basics of effective communication both verbally and written, as well as the correct way to establish a cordial relationship between the Pharmacy Technician and patient, as with their colleagues. Acquaints students with aspects of self-esteem, personality, relationships, job search and interview.

**PHAT 224**  
**Pharmacy Practice Laboratory**  
**Three Credits**

Case Study of the Pharmacy Technician functions related to the delivery of drugs. Development of skills in the use and handling of equipment and books required by law. Analysis of the prescription for release from the interpretation, product selection, extemporaneous preparations, labeling and packaging. It includes the responsibilities of the Pharmacy Technician in a hospital environment with emphasis on the most common drugs used in the hospital, techniques and sterile preparations and preventive measures to avoid errors in the process of preparation of a medicament.

Requisites: PHAT 002, PHAT 006, PHAT 116, PHAT 117, PHAT 218, PHAT 019, PHAT 020

**PHAT 025**  
**Internship I**  
**Six Credits**

Integration of knowledge and skills acquired in a real scenario that facilitate the development and strengthening internal core competencies to serve as a Pharmacy

Technician future. The internship takes place in a community pharmacy, chain or institutional or a combination of these and it will be supervised by a licensed pharmacist duly authorized by the Pharmacy Examining Board, as stipulated in the Law # 247 Pharmacy Act Puerto Rico. Total hours required during the period is 500 hours.

Requisites: PHAT 021, PHAT 022, PHAT 023, PHAT 024

**PATH 226**  
**Internship II**  
**Six Credits**

Integration of knowledge and skills acquired in a real scenario that facilitate the development and strengthening internal core competencies to serve as a Pharmacy Technician future. The internship takes place in a community pharmacy, chain or institutional or a combination of these and it will be supervised by a licensed pharmacist duly authorized by the Pharmacy Examining Board, as stipulated in the Law # 247 Puerto Rico Pharmacy Act . Total hours required during the period is 500 hours to complete the 1,000 hours required by the Pharmacy Examining Board as established by law and thus complete the requirements to be eligible for revalidation of Pharmacy Technician.

Requisites: PHAT 021, PHAT 022, PHAT 023, PHAT 024

**POSC 085**  
**Civil Rights in Puerto Rico**  
**Three Credits**

The course presents statutory, constitutional and Supreme Court case law sources of civil rights guarantees in Puerto Rico. Case studies of contradictory government actions including legislation limiting rights will be studied. Three hours per week.

**PRES 002**  
**Health, Hygiene and Nutrition**  
**Three Credits**

The course is designed to train education students with the required competence in the areas of health, hygiene and nutrition applicable to all students to enable them to obtain a better quality of life.

**PRES 022**  
**Development of Language and Speech Correction**  
**Three Credits**

This course provides the future teacher with the information related to language development of preschool and elementary school children. The emphasis of this course is in identification and referral of children with these difficulties so they may receive the special services they will need to improve their oral communication.

Requisites: PRES 071, 072

**PRES 035**

**Introduction to Education**

**Three Credits**

This course is based on the constructivist paradigm. The goal of the course is to provide future education professionals with a highly pertinent formative skill: Mastery in goal conceptualization and evaluation of their strengths and weaknesses. Special attention will be given to the observation and analysis of the scholastic scene, as well as to the processes of education and learning. The course entails 15 hours of clinical experience in schools. The student becomes an active thinking subject capable of constructing his own knowledge.

**PRES 071**

**Human Growth and Development**

**Three Credits**

Growth and development of children from birth through adolescence and the implications for teachers and school personnel. Three hours per week.

**PRES 072**

**Educational Psychology**

**Three Credits**

This course provides an overview of concepts learning and intelligence and their relationship to human development. It examines the theoretical frameworks related to learning and intelligence and different learning styles. We discuss the theories of learning and their relationship to the functions of the teacher.

Requisites: PRES 071

**PRES 076**

**Classroom Management**

**Three Credits**

This course aims to promote the comprehensive development of the student within a constructivist approach, along with the development of critical thinking and a philosophy of total quality. We will study the theories and models of classroom management. The course will investigate the techniques and strategies for group control and behavior modification.

Requisites: PRES 035, PRES 071, PRES 072

**PRES 102**

**Teaching Materials and Learning Devices**

**Three Credits**

In this course, the future teacher studies, analyzes, plans, designs and produces multiple materials for teaching. The course relies on communication processes and the intellectual processes categorized by Benjamin Bloom in the planning, design and production of materials. It uses Ralph Tyler's model for the systematic organization of cognitive

development to produce a teaching module. The course is useful in the preparation program for teachers in elementary and secondary education, special education, physical education and other areas. It introduces the students to the integration of educational technology in education.

**PRES 107**

**The Teaching of Writing from Kindergarten to Third Grade**

**Three Credits**

Study and analysis of the theory and practice used in the teaching of writing in grades kindergarten to third. Development of teaching techniques and strategies used to teach writing to young **children** are emphasized. Includes diagnosis and correction of writing difficulties.

**PRES 114**

**Computers in Education**

**Three Credits**

The course studies issues relating to the use and impact of computer education and the theories that support its integration into the educational field. Constructivist methodology will be used to refine humanistic skills related to the development of thinking skills and problem solving in the school environment. Students become familiar with computer programs from a practical perspective.

**PRES 119**

**Theory, Practices and the Game-like Education Strategy**

**Three Credits**

Study, practice and assessment of theories related to play activities and the use of play and game activities as teaching strategies in preschool education. Topics to be discussed include the role of play and game activities in child development. Three hours per week.

**PRES 123**

**Children's Literature**

**Three Credits**

This course offers the future teacher aid, in a theoretical and practical form, by presenting the most essential material related to children's literature within the preschool program. In this course books, works of art, fiction, folklore, poetry and games will be studied. Three hours per week.

**PRES 136**

**Curriculum and Teaching Methods**

**Three Credits**

The course presents the physical environment, educational materials and resources, and the curricular content of the

preschool program. It examines different approaches to preschool education. Three hours per week.

**PRES 139**

**Education for Exceptional Children**

**Three Credits**

The course studies widespread intellectual deviations brought about by psycho-neurological disorders of learning, emotional problems and social adjustment. It also studies communicative disorders such as deafness, speech and/or language problems, visual impairments, neurological and orthopedic problems, as well as health problems.

Requisite: PRES 071

**PRES 143**

**Practical Experiences at Preschool Level for Assistant of Teachers**

**Three Credits**

This is a clinical experience in which student-teacher experiment and practice the knowledge, skills and attitudes obtained in their preparatory courses. The student-teacher will be responsible of conducting learning experiences of a group of children in a preschool program and will attend the preschool center for twenty hour a week and concurrent weekly seminars.

Requisites: PRES 035, PRES 071, PRES 072, PRES 123, PRES 102, PRES 107, PRES 119, PRES 136, PRES 139

**PRES 144**

**Administration of Educational Programs for Infants, Toddlers and Preschool Children**

**Three Credits**

The course studies and analyzes knowledge content and skills required in planning, managing and coordinating educational programs for infants, toddlers and preschool children. Topics discussed are: types of programs, planning and evaluation of goals, selection and supervision of human resources, use and maintenance of physical resources, the role of parents in the education of young children, government agencies that regulate programs and facilities, and current regulations regarding these programs. Clinical experiences are required amounting to at least 15 hours per semester.

**PRES 166**

**Child Care in Early Education**

**Three Credits**

The course examines the different tasks of caregivers of young children in school or daycare facilities; their roles, their responsibilities over the education of young children, and what they should know about their relationship with the children and their parents.

Three hours per week.

**PSYC 005**

**Personal, Academic and Labor Development**

**Three Credits**

The course provides students with a series of technical and educational experiences designed to demonstrate how to identify and develop personal and skills to facilitate the successful performance in personal, academic and work areas. We give importance to processes in decision making, gaining self-knowledge, a clear self-concept, and developing healthy self-esteem, to achieve a high level of professionalism. Emphasis is placed on the techniques of teamwork, interpersonal relationships, ethics, and channels of communication, motivation, job satisfaction, performance, professional development and organizational culture.

**RESP 100**

**Introduction to Respiratory Care**

**Three Credits**

This course introduces students to the medical discipline of respiratory care. Specifically addresses the historical, quality, ethics, security, communication and professional organization of the discipline. It enters in to the topic of oxygen administration and the techniques used for this purpose. Briefly describes the topics included within the field of respiratory care.

**RESP 101**

**Cardiopulmonary Anatomy and Physiology**

**Three Credits**

Course leading to develop in students the knowledge of anatomy and physiology of the cardiopulmonary system and the different organs and functions of this system. After completing this course the student will be able to recognize and describe the organs that make up the cardiopulmonary system, and identify the physiological processes carried out by the organs of the cardiopulmonary system.

Requisite: BIOL 100

**RESP 102**

**Principles of Respiratory Therapy**

**Three Credits**

Develop primary knowledge of respiratory therapy and its history. Development and application of basic skills for adequate assessment of patients. Know the proper handling of humidity therapy, aerosol and oxygen in routine situations and / or emergencies.

Requisite: RESP 100

**RESP 202**

**Cardiopulmonary Pathophysiology**

**Three Credits**

Recognition, diagnosis and management of cardio-respiratory conditions. Development of different techniques: diagnosis, recognition skills and therapeutic applications in the different conditions presented. Assess the patient according to diagnostic measures studied.

Requisites: RESP 100, RESP 101

**RESP 203**

**Respiratory Therapy Pharmacology**

**Three Credits**

Course designed to train students in basic principles of pharmacology based on the treatment and management of cardio-respiratory conditions. Knowledge of proper use and indicated bronchia dilatator drugs, anti-inflammatories, antibiotics, prophylactic drugs, analgesics and anti-arrhythmic drugs.

Requisite: CHEM 101, BIOL 100

**RESP 204**

**Respiratory Management**

**Three Credits**

This course is designed to train students in therapeutic treatments hyperinflation therapy, chest physiotherapy and airway management of natural and artificial. Procedures of extubation of patients. Understand and apply the techniques of hyperinflation therapy. Know and apply the techniques of chest physical therapy. Understand and apply management techniques natural and artificial airways.

**RESP 205**

**Diagnostic Evaluation in Respiratory Care**

**Three Credits**

This course provides relevant information related to the knowledge and skills that are necessary for the respiratory therapist is competent in the diagnostic evaluation of the patient. Included in some detail the basic principles of history and physical exam skills including obtaining vital signs, and the rationale and interpretation of diagnostic tests for blood gases, chest X-rays and other images, flexible bronchoscopy, monitoring cardiac output, the nutritional assessments, breathing patterns and documentation of the diagnostic evaluation.

**RESP 206**

**Sample of Blood Gases and Function**

**Two Credits**

This course is designed in the evaluation, implementation, management and interpretation of arterial blood gas sample and simple pulmonary function tests. Evaluate and make pulmonary function tests. Perform various tests to

measure lung function. Suggest additional pulmonary function tests and / or specialized for specific cases. Take, analyze and interpret blood tests for blood gases. Suggest oxygenation changes respiratory treatment based on blood gas results.

Requisites: RESP 100, RESP 102

**RESP 207**

**Mechanical Ventilation**

**Three Credits**

Course designed to train students in basic and advanced principles of mechanical ventilation. Identifying the issues concerning the initiation, monitoring and weaning of adult patients on mechanical ventilation and noninvasive.

Requisites: BIOL 100, RESP 203

**RESP 208**

**Neonatal and Pediatric Patient Management**

**Three Credits**

This course is designed for students to study the evaluation and implementation of pediatric and neonatal respiratory care, emphasizing the management of cardio-respiratory conditions. In addition to situations that lead to patient mechanic ventilation. Evaluate basic and advanced pediatric and neonatal patients. Recognizing the diagnosis and treatment of cardiopulmonary conditions more common in pediatric and neonatal. Start, change parameters and/or weaning pediatric and neonatal patients off mechanical ventilation.

**RESP 209**

**Practicum**

**Four Credits**

This course is designed for the student evaluates and intervenes with adult, pediatric and neonatal hospital in a real clinical setting. It can apply the knowledge gained in therapeutic and diagnostic procedures, including airway management, CPR, oxygen, aerosol therapy. Development of clinical and practical knowledge of the student, including general adult care, pediatric and neonatal. Integrate the principles of cognitive, affective and psychomotor skills in patient care situations. Adequate use and proper application of basic equipment and advanced respiratory patterns. The clinical portion of the course will consist of 15 hours per week for the duration of these 15 weeks making a total of 225 hours.

Requisites: RESP 100, RESP 101, RESP 102, RESP 202, RESP 203, RESP 204, RESP 205, RESP 206

**RESP 210**

**Knowledge Integration in Respiratory Therapy**

**Three Credits**

This course is a review of all concepts and practices studied in the Respiratory Care Program with the intention of providing the necessary integration with a view to taking the examinations for licensing and accreditation.

Requisites: RESP 100, RESP 101, RESP 102, RESP 202, RESP 203, RESP 204, RESP 205, RESP 206

**SPAT 001**  
**Spanish I**  
**Three Credits**

The course is directed toward the development of the basic skills of oral communication, reading and writing. The study and analysis of readings and texts will provide the tools necessary to develop the skills of oral and written expression, which will then be the bridge to writing practice. The development of the course has an interdisciplinary perspective.

# RETENTION INDEXES

<b>ASSOCIATE PROGRAM 56 CREDITS</b>		
Department	Level	Major
10	1	Accounting
10	1	Management
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-84	67%	2

<b>ASSOCIATE PROGRAM 61 CREDITS</b>		
Department	Level	Major
80	1	Electronic Engi. Tech
80	1	Mechanical Engi. Tech
80	1	Computer Tech & Networks
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-91	67%	2

<b>ASSOCIATE PROGRAM 58 CREDITS</b>		
Department	Level	Major
80	1	Quality Control Eng. Tech.
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-87	67%	2

<b>ASSOCIATE PROGRAM 62 CREDITS</b>		
Department	Level	Major
80	1	Plastics Engi. Tech
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-93	67%	2

<b>ASSOCIATE PROGRAM 60 CREDITS</b>		
Department	Level	Major
10	1	Computerized Information System
10	1	Pharmaceutical Manufacturing
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-90	67%	2

<b>ASSOCIATE PROGRAM 63 CREDITS</b>		
Department	Level	Major
10	1	Office Administration
20	1	Biotechnology
20	1	Pharmaceutical and Chemical Operations
60	1	Web Design
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-94	67%	2

<b>ASSOCIATE PROGRAM 56 CREDITS</b>		
Department	Level	Major
10	1	Accounting
10	1	Management
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-84	67%	2

<b>ASSOCIATE PROGRAM 61 CREDITS</b>		
Department	Level	Major
80	1	Electronic Engi. Tech
80	1	Mechanical Engi. Tech
80	1	Computer Tech & Networks
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-91	67%	2

<b>ASSOCIATE PROGRAM 58 CREDITS</b>		
Department	Level	Major
80	1	Quality Control Eng. Tech.
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-87	67%	2

<b>ASSOCIATE PROGRAM 62 CREDITS</b>		
Department	Level	Major
80	1	Plastics Engi. Tech
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-93	67%	2

<b>ASSOCIATE PROGRAM 60 CREDITS</b>		
Department	Level	Major
10	1	Computerized Information System
10	1	Pharmaceutical Manufacturing
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-90	67%	2

<b>ASSOCIATE PROGRAM 63 CREDITS</b>		
Department	Level	Major
10	1	Office Administration
20	1	Biotechnology
20	1	Pharmaceutical and Chemical Operations
60	1	Web Design
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-94	67%	2

<b>ASSOCIATE PROGRAM 67 CREDITS</b>		
Department	Level	Major
<b>60</b>	<b>1</b>	<b>Fashion Design</b>
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
17-32	54%	1.65
33-48	58%	1.75
49-64	62%	1.9
65-80	64%	2
81-101	67%	2

<b>* ASSOCIATE PROGRAM 75 CREDITS</b>		
Department	Level	Major
<b>70</b>	<b>1</b>	<b>General Social Sciences</b>
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
22-42	54%	1.65
43-63	58%	1.75
64-83	62%	1.9
84-100	64%	2
101-112	67%	2

<b>ASSOCIATE PROGRAM 70 CREDITS</b>		
Department	Level	Major
<b>61</b>	<b>1</b>	<b>Architectural Drafting</b>
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
19-36	54%	1.65
37-54	58%	1.75
55-72	62%	1.9
73-90	64%	2
91-105	67%	2

<b>ASSOCIATE PROGRAM 72 CREDITS</b>		
Department	Level	Major
<b>70</b>	<b>1</b>	<b>Public Administration</b>
Attempted Credits	% Credits Required	Retention Rate
1-16	50%	1.5
19-36	54%	1.65
37-54	58%	1.75
55-72	62%	1.9
73-90	64%	2
91-108	67%	2